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BARRACKS

MAIN BUILDING

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ATHLETIC FIELD IN FOREGROUND

TEXTILE BUILDING

CATALOGUE

OF THE

CLEMSON

111

Agricultural College

OF

SOUTH CAROLINA

State Agricultural and Mechanical College

1902-1903

TENTH YEAR

Columbia, S. C.

THE R. L. BRYAN COMPANY

1903

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1902-1906

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28	29	30					27	28	29	30	31			26	27	28	29	30			25	26	27	28	29	30	31	

Calendar

Session of 1903-1904

Examinations for admission, September 4-9, 1903.

Session begins Wednesday, September 9, 1903.

Second Quarter begins Monday, November 16, 1903.

Thanksgiving Day, Thursday, November 26, 1903.

Christmas Vacation, December 23, 1903, to January 2, 1904.

Society Day, January 19, 1904.

Second Term (Third Quarter) begins Wednesday, January 27, 1904.

Society Day, March 18, 1904.

Fourth Quarter begins Monday, April 4, 1904.

Society and Field Day, May 1st, 1904.

Baccalaureate Sunday, June 5, 1904.

Alumni Address, June 6, 1904.

Address to Graduating Class, June 7, 1904.

Commencement Day, June 7, 1904.

Post-office and Telegraph Office: CLEMSON COLLEGE, S. C.

Freight and Express Office: CALHOUN (Southern Ry.),
S. C.

Board of Trustees

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SENATOR B. R. TILLMAN.....	Edgefield
HON. R. E. BOWEN.....	Pickens
HON. D. K. NORRIS.....	Anderson
HON. J. E. BRADLEY.....	Abbeville
HON. M. L. DONALDSON.....	Greenville
HON. J. E. WANNAMAKER.....	Orangeburg

Term Expires 1904

HON. J. E. TINDAL.....	Clarendon
HON. J. S. GARRIS.....	Spartanburg
HON. JESSE H. HARDIN.....	Chester

Term Expires 1906

HON. W. D. EVANS.....	Chesterfield
HON. A. T. SMYTHE.....	Charleston
HON. L. A. SEASE.....	Lexington

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R. E. BOWEN,	J. E. BRADLEY	

Finance Committee

R. W. SIMPSON,	A. T. SMYTHE,	M. L. DONALDSON
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Fertilizer Control Committee

J. E. TINDAL,	J. E. WANNAMAKER,	W. D. EVANS
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Experiment Station Committee

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M. L. DONALDSON	A. T. SMYTHE	

Institute Committee

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W. D. EVANS,	B. R. TILLMAN	

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M. L. DONALDSON, L. A. SEASE, J. E. WANNAMAKER

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P. H. E. SLOAN.....	Secretary and Treasurer
G. E. TAYLOR.....	Book-keeper
H. M. STACKHOUSE...	Secretary of Fertilizer Inspection Board

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FOURTH DISTRICT—Hon. D. E. Hydrick, Spartanburg

FIFTH DISTRICT—Hon. J. L. Glenn, Chester

SIXTH DISTRICT—Hon. J. H. Hudson, Bennettsville

SEVENTH DISTRICT—Hon. F. D. Bates, Orangeburg

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(Arranged in each department in the order of Election)

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C. C. NEWMAN
Associate Professor of Horticulture

CHAS. E. CHAMBLISS, M. S.
Associate Professor of Zoology and Entomology

HAVEN METCALF, A. M., Ph. D.
Associate Professor of Botany and Bacteriology

C. O. UPTON, B. Agri.
Assistant Professor of Dairying and Animal Husbandry

H. BENTON, M. S.
Assistant Professor of Agriculture

O. M. WATSON
Assistant in Poultry Industry

*A. S. SHEALY, B. S.
Assistant in Veterinary Science

*Absent on leave for one year, session 1902-'3, during which time his place was filled by Dr. R. J. Foster.

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Director

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Associate Professor of Physics

R. E. LEE, B. S.

Associate Professor of Drawing

S. B. EARLE, M. A., M. E.

Associate Professor of Mechanical Engineering

W. W. KLUGH, B. S.

Assistant Professor of Drawing

WILLS JOHNSON

Assistant Professor of Forge and Foundry

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Assistant Professor of Machine-work

J. H. HOOK, B. S.

Assistant Professor of Wood-work

H. H. KYSER, E. M. E.

Assistant Professor of Electricity

JNO. W. GANTT

Assistant in Wood-work

F. T. DARGAN, M. S.

Assistant in Drawing

Department of Chemical Science

M. B. HARDIN

Director

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F. S. SHIVER, Ph. G.

Assistant Professor of Agricultural Analysis

D. H. HENRY, B. S.

Instructor in Chemistry

Department of Textile Industry

J. H. M. BEATY
Director

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Associate Professor of Weaving and Designing

J. H. JAMES, Ph. D.
Assistant Professor of Organic Chemistry and Dyeing

B. M. PARKER, B. S.
Instructor in Textile Industry

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W. S. MORRISON, A. B.
Professor of History and Political Economy

P. T. BRODIE, B. S., A. B.
Professor of Mathematics

J. S. McLUCAS, A. M.
Assistant Professor of English

C. B. WALLER, A. M., Ph. D.
Assistant Professor of Mathematics

D. W. DANIEL, M. A.
Assistant Professor of English

S. M. MARTIN
Assistant Professor of Mathematics

S. W. REAVES, B. S., A. B.
Assistant Professor of Mathematics

G. SHANKLIN, B. S.
Assistant Professor of Mathematics

T. W. KEITT
Assistant Professor of English

A. B. BRYAN, B. S., B. Lit.
Instructor in English

CLEMSON COLLEGE

Military Department

LIEUT. E. A. SIRMAYER, 3d Cavalry U. S. A.
Commandant and Professor of Military Science and Tactics

Preparatory Department

M. E. BRADLEY, A. B.
Assistant in English and Mathematics

J. E. HUNTER, B. S.
Assistant in Mathematics

The following members of the Collegiate Faculty also instruct the Preparatory Class in the subjects indicated:

W. S. MORRISON, History

J. V. LEWIS, Geography

T. W. KEITT, English

A. B. BRYAN, English

Committees of Faculty

(The President is *ex officio* a member of each Committee)

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W. S. MORRISON	W. M. RIGGS
J. V. LEWIS	E. A. SIRMAYER
	J. S. NEWMAN

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✓ C. M. FURMAN	J. V. LEWIS
W. S. MORRISON	W. M. RIGGS

Committee on Chapel Services

T. G. POATS, *Chairman*

F. S. SHIVER	T. W. KEITT
C. C. NEWMAN	F. D. FRISSELL

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* J. S. McLUCAS, *Chairman*

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A. B. BRYAN	H. METCALF

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D. W. DANIEL, *Chairman*

✓ S. M. MARTIN	W. W. KLUGH
H. H. KYSER	C. B. WALLER

Committee on Chapel Music

J. V. LEWIS, *Chairman*

W. M. RIGGS	O. M. WATSON
E. A. SIRMAYER	J. H. HOOK
	C. B. WALLER

Schedule Committee

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R. N. BRACKETT	R. E. LEE
C. M. FURMAN	S. W. REAVES

Committee on Athletics

W. M. RIGGS, *Chairman*

H. H. KYSER

D. W. DANIEL

J. S. McLUCAS

J. V. LEWIS

Committee on Preparatory Department

C. M. FURMAN, *Chairman*

W. S. MORRISON

P. T. BRODIE

J. V. LEWIS

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Commandant

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Secretary of Faculty

G. SHANKLIN
Registrar

Miss MINNIE B. WANNAMAKER
Secretary to the President

J. N. HOOK
Justice Clemson College Corporation

J. P. LEWIS
Superintendent of College Farm

A. SCHILLETTER
Steward

Miss A. L. LEWIS
Librarian

Ministers for Session 1902-1903

REV. J. E. BEARD
REV. K. G. FINLAY

REV. R. P. PELL
REV. A. J. S. THOMAS

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P. H. E. SLOAN, M. D.
M. B. HARDIN
J. S. NEWMAN

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J. S. NEWMAN, *Vice-Director and Agriculturist*
M. B. HARDIN, *Chief Chemist*
G. E. NESOM, B. Sc., D. V. M., *Veterinarian*
C. C. NEWMAN, *Horticulturist*
C. E. CHAMBLISS, M. Sc., *Entomologist*
C. O. UPTON, B. Agr., *Dairy and Animal Husbandry*
HAVEN METCALF, A. M., *Botanist and Bacteriologist*

F. S. SHIVER, Ph. G., *Assistant Chemist*
*C. C. McDONNELL, B. S., *Assistant Chemist*
*B. F. BORERTSON, B. S., *Assistant Chemist*
D. H. HENRY, B. S., *Assistant Chemist*
H. BENTON, M. S., *Assistant Agriculturist*
O. M. WATSON, *Poultry*
J. S. PICKETT, *Foreman*
B. H. RAWL, *Assistant Animal Husbandry*
JOHN N. HOOK, *Secretary and Librarian*

*Engaged in Fertilizer Analyses.

HISTORY AND GOVERNMENT OF
THE COLLEGE

History and Government of the College

The College was established in 1889 by the Act of the General Assembly, approved the 27th of November of the same year. This move on the part of the General Assembly was brought about largely by the farmers of South Carolina, who in a convention which assembled in Columbia in 1886, resolved that the time had arrived for the building of an institution the purpose of which should be to give a college education to the farmer's sons as well as to provide for the education of the industrial classes generally of the State.

An effort, therefore, was made to concentrate the money appropriated by the United States Government for the establishment of an Agricultural and Mechanical College at some convenient point in the State. The matter was given definite form by the action of the Hon. Thomas G. Clemson, son-in-law of John C. Calhoun, who left as a bequest to the State the old Calhoun homestead, Fort Hill, consisting of about 800 acres of land, and \$58,539 in other securities for the purpose of establishing an Agricultural College. He died April 6th, 1888.

Thomas G. Clemson's Will

The following paragraphs are extracts from Mr. Clemson's will relating to the establishment of the College:

Whereas, I, Thos. G. Clemson, of the County and State aforesaid, did on the 14th of August, 1883, execute my last will and testament, wherein I sought to provide for the establishment of a scientific institution upon the Fort Hill place, and therein provided what sciences should be taught in said institution; and whereas, I am now satisfied that my intention and purpose therein may be misunderstood as intending

that no other studies or sciences should be taught in said institution than those mentioned in said will, which was not my purpose or intention: Now, desiring to make my purpose plain, as well as to make some other changes in the disposition of my property than made in said will, I do now make, publish and declare this instrument as and for my last will and testament, hereby revoking all previous wills and codicils by me made, especially the will above referred to, dated August 14th, 1883. Feeling a great sympathy for the farmers of this State, and the difficulties with which they have had to contend in their efforts to establish the business of agriculture upon a proper basis, and believing there can be no permanent improvement in agriculture without a knowledge of those sciences which pertain particularly thereto, I have determined to devote the bulk of my property to the establishment of an Agricultural College upon the Fort Hill place. My purpose is to establish an Agricultural College which will afford useful information to the farmers and mechanics; therefore it should afford thorough instruction in agriculture and the natural sciences connected therewith; it should combine, if practicable, physical with intellectual education, and should be a high seminary of learning in which the graduate of the common schools can commence, pursue and finish a course of studies terminating in thorough theoretic and practical instruction in those sciences and arts which bear directly upon agriculture. But I desire to state plainly, that I wish the Trustees of said institution to have full authority and power to regulate all matters pertaining to said institution, to fix the course of studies, to make rules for the government of the same, and to change them, as in their judgment experience may prove necessary; but to always bear in mind that the benefits herein sought to be bestowed are intended to benefit agricultural and mechanical industries. I trust I do not exaggerate the importance of such an institution for developing the material resources of

the State, by affording its youth the advantage of scientific culture, and that I do not over-rate the intelligence of the Legislature of South Carolina, ever distinguished for liberality, in assuming that such appropriations will be made as will be necessary to supplement the fund resulting from the bequest herein made.

ITEM 1.—I therefore give and devise to my executor hereinafter named, the aforesaid Fort Hill place, where I now reside, formerly the house of my father-in-law, John C. Calhoun, consisting of eight hundred and fourteen acres, more or less, in trust that whenever the State of South Carolina may accept said property as a donation from me, for the purpose of thereupon founding an Agricultural College, in accordance with the views I have hereinbefore expressed, (of which the Chief Justice of South Carolina shall be the Judge,) then my executor shall execute a deed of the said property to the said State and turn over to the same all property hereinafter given as an endowment of said institution, to be held as such by the said State so long as it in good faith devotes said property to the purpose of the donation: *Provided, however,* That this acceptance by the State shall be signified, and a practical carrying out be commenced, within three years from the date of the probate of this my will. During this term of three years, or as much thereof as may elapse before the acceptance or refusal of this donation, my executor shall invest the net produce of the land and other property, such invested fund awaiting the action of the Legislature, and to form a part of the endowment of said institution, if accepted, or to form a part of the endowment of the college or school hereinafter provided for, should the donation not be accepted by the State.

ITEM 2. The following named gentlemen, seven in number, shall be seven of the Board of Trustees, to wit: R. W. Simpson, D. K. Norris, M. L. Donaldson, R. E. Bowen, B. R. Tillman, J. E. Wannamaker, and J. E. Bradley; and the

State if it accepts the donation shall never increase the Board of Trustees to a number greater than thirteen in all, nor shall the duties of said Board be taken away or conferred upon any other men or body of men. The seven Trustees appointed by me, shall always have the right, and the power is hereby given them and their successors, which right the Legislature shall never take away or abridge, to fill all vacancies which may occur in their number by death, resignation, refusal to act, or otherwise. But the Legislature may provide as it sees proper for the appointment or election of the other six Trustees, if it accepts the donation. And I do hereby request the seven Trustees above named, or such of them as may be living, or may be willing to act, to meet as soon after my death as practicable, and organize and at once fill all vacancies that may have occurred, and exert themselves to effectuate my purposes as herein set forth. And I hereby instruct my executor to notify them of their appointment herein, as soon as practicable. The name of this institution is to be "The Clemson Agricultural College of South Carolina."

ITEM 4.—It is my desire that the dwelling house on Fort Hill shall never be torn down or altered, but shall be kept in repair, with all the articles of furniture and *virtu*, which I hereinafter give for that purpose, and shall always be open for the inspection of visitors; but a part of the house may be used by such of the Professors as the Trustees may direct.

Laws of Congress Relating to the College

AN ACT donating public lands to the several States and Territories which may provide Colleges for the benefit of agriculture and the mechanic arts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,
That there be granted to the several States, for the purpose



CAMPUS VIEW NEAR PRESIDENT'S RESIDENCE.

hereinafter mentioned, an amount of public land, to be apportioned to each State a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty: *Provided*, That no mineral lands shall be selected or purchased under the provisions of this Act.

SEC. 2. *And be it further enacted*, That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections not less than one-quarter of section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands within the limits of such State; and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public land subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this Act, land scrip to the amount of acres for the deficiency of its distributive share; and scrip to be sold by said State, and the proceeds thereof applied to the uses and purposes prescribed in this Act, and for no other use or purpose whatever: *Provided*, That in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United States subject to sale at private entry, at one dollar and twenty-five cents or less per acre: *and provided further*, That not more than one million acres shall be located by such assignees in any one of the State: *and provided, further*, That no such location shall be made before one year from the passage of this Act.

SEC. 3. *And be it further enacted*, That all the expenses

of management, superintendence and taxes, from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom, shall be paid by the States, to which they may belong, out of the treasury of said States, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. *And be it further enacted*, That all moneys derived from the sale of the lands aforesaid by the States to which the lands are apportioned, and from the sale of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or of some other safe stocks yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in fifth Section of this Act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this Act to the endowment, support and maintenance of at least one College, where the leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, and in such manner as the Legislature of the States may prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

SEC. 5. *And be it further enacted*, That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts.

1. If any portion of the fund invested as provided by the foregoing section, or any portion of the interest thereon,

shall by any act or contingency be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth Section of this Act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this Act may be expended for the purchase of lands for sites of experiment farms whenever authorized by the respective Legislatures of said States.

2. No portion of said fund, nor interest thereon, shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

3. Any State which may take and claim the benefit of the provisions of this Act, shall provide within five years at least not less than one College, as described in the fourth Section of this Act, or the grant to said State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold, and the title to purchasers under the State shall be valid.

4. An annual report shall be made regarding the progress of each College, recording any improvements and experiments made, with their costs and results, and such other matters, including State and industrial statistics, as may be supposed useful; one copy of which shall be transmitted by mail free by each to all the other Colleges which may be endowed under the provisions of this Act, and also one copy to the Secretary of the Interior.

5. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the States at the maximum price, and the number of acres proportionately diminished.

6. No State, while in a condition of rebellion or insurrec-

tion against the government of the United States, shall be entitled to the benefit of this Act.

7. No State shall be entitled to the benefit of this Act unless it shall express the acceptance thereof by the Legislature within two years of the date of its approval by the President.

SEC. 6. *And be it further enacted*, That land scrip issued under the provisions of this Act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three.

SEC. 7. *And be it further enacted*, That the land officers shall receive the same fees for locating land scrip issued under the provisions of this Act as are now allowed for the location of military bounty land warrants under existing laws: *Provided*, That maximum compensation shall not be thereby increased.

SEC. 8. *And be it further enacted*, That the Governors of the several States to which scrip shall be issued under this Act shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved July 2, 1862.

AN ACT to establish Agricultural Experiment Stations in connection with the colleges established in the several States under the provisions of an Act approved July 2, 1862, and of the Acts supplementary thereto.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the prin-

ciples and applications of agricultural science, there shall be established, under direction of College or Colleges, or Agricultural Department of Colleges in each State or Territory established, or which may hereafter be established, in accordance with the provisions of an Act approved July 2, 1862, entitled "An Act donating public lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts," or any of the supplements to said Act, a department known and designated as an "Agricultural Experiment Station:" *Provided*, That any State or Territory in which two such Colleges have been or may be so established, the appropriation hereinafter made to such State or Territory shall be equally divided between such Colleges, unless the Legislature of such State or Territory shall otherwise direct.

SEC. 2. That it shall be the object and duty of said Experiment Stations to conduct original researches or verify experiments on the physiology of plants and animals; the disease to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying condition and needs of the respective States and Territories.

SEC. 3. That in order to secure, as far as practicable, uni-

formity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to furnish forms, as far as practicable, for the tabulation of results of investigation or experiments; to indicate, from time to time, such lines of inquiry as to him shall seem most important; and, in general, to furnish such advice and assistance as will promote the purposes of this Act. It shall be the duty of each of said stations annually, on or before the first day of February, to make to the Governor of the State or Territory in which it is located a full and detailed report of its operations, including a statement of receipts and expenditures, a copy of which report shall be sent to each of said stations, to the Commissioner of Agriculture, and to the Secretary of the Treasury of the United States.

SEC. 4. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore prescribed, the sum of \$15,000 per annum is hereby appropriated to each State, to be especially provided for by Congress in the appropriations from year to year, and to each Territory entitled under the provisions of Section eight of this Act, out of any money in the treasury proceeding from the sales of public lands, to be paid in equal quarterly payments, on the first day of January, April, July and October in each year,

to the Treasurer or other officer duly appointed by the governing boards of said Colleges to receive the same, the first payment to be made on the first day of October, 1887: *Provided, however,* That out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection, enlargement, or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five per centum of such annual appropriation may be so expended.

SEC. 6. That whenever it shall appear to the Secretary of the Treasury from the annual statement of receipts and expenditures of any of said stations that a portion of the preceding annual appropriation remains unexpended, such amount shall be deducted from the succeeding annual appropriation to each station, in order that the amount of money appropriated to any station shall not exceed the amount actually and necessarily required for its maintenance and support.

SEC. 7. That nothing in this Act shall be construed to impair or modify the legal relation existing between any of the said Colleges and the government of the States or Territories in which they are respectively located.

SEC. 8. That in States having Colleges entitled under this Section to the benefits of this Act and having also Agricultural Experiment Stations established by law separate from said Colleges, such States shall be authorized to apply such benefits to experiments at stations so established by such States; and in case any State shall have established under the provisions of said Act of July 2d aforesaid, an Agricultural Department or Experimental Station, in connection with any University, College or institution not distinctively an Agricultural College or School, and such States shall have established or shall hereafter establish a separate Agricultural College or School, which shall have connected there-

with an Experimental Farm or Station, the Legislature of such State may apply in whole or in part the appropriation made by this Act, to separate Agricultural College or School, and no Legislature shall by contract expressed or implied disable itself from so doing.

SEC. 9. That the grant of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purposes of said grants: *Provided*, That payment of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of its Legislature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to by the Secretary of the Treasury.

SEC. 10. Nothing in this Act shall be held or construed as binding the United States to continue any payments from the Treasury to any or all the States or institutions mentioned in this Act, but Congress may at any time amend, suspend or repeal any or all the provisions of this Act.

Approved March 2, 1887.

AN ACT to supply a portion of the public lands to the more complete endowment and support of Colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an Act of Congress, approved July second, eighteen hundred and sixty-two.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be, and hereby is, annually appropriated out of any money in the Treasury not otherwise appropriated, arising from the sales of public lands, to be paid as hereinafter provided, to each State and Territory for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts now established, or which may be hereafter established, in accordance with an

Act of Congress, approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirtieth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years by an additional sum of one thousand dollars over the preceding year, and the annual amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction: *Provided*, That no money shall be paid out under this Act to any State or Territory for the support and maintenance of a college where a distinction of race or color is made in admission of students, but the establishment and maintenance of such colleges separately for white and colored students shall be held to be a compliance with the provisions of this Act if the funds received in such State or Territory be equitably divided as hereinafter set forth: *Provided*, That in any State in which there has been one college established in pursuance of the Act of July second, eighteen hundred and sixty-two, and also in which an educational institution of like character has been established, or may be hereafter established, and is now aided by such State from its own revenue for the education of colored students in agriculture and the mechanic arts, however named or styled, or whether or not it has received money heretofore under the Act to which this Act is an amendment, the Legislature of such State may propose and report to the Secretary of the Interior a just and equitable division of the funds to be received under this Act between one college for white students and one institution for colored students established as aforesaid, which shall be divided into two parts and paid accordingly, and thereupon such institution for colored students

shall be entitled to the benefits of this Act and subject to its provisions, as much as it would have been if it had been included under the Act of eighteen hundred and sixty-two, and the fulfillment of the foregoing provisions shall be taken as a compliance with the provision in reference to separate colleges for white and colored students.

SEC. 2. That the sums hereby appropriated to the States and Territories for the further endowment and support of colleges shall be annually paid on or before the thirty-first day of July of each year, by the Secretary of the Treasury upon the warrant of the Secretary of the Interior, out of the Treasury of the United States, to the State or Territorial Treasurer or to such officer as shall be designated by the laws of such State or Territory to receive same, who shall, upon the order of the trustees of the college, or the institution for colored students, immediately pay over said sums to the Treasurers of the respective colleges or other institutions entitled to receive the same, and such Treasurers shall be required to report to the Secretary of Agriculture and to the Secretary of the Interior on or before the first day of September of each year, a detailed statement of the amount so received and of its disbursement. The grants of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purpose of said grants: *Provided*, That payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of Legislature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 3. That if any portion of the moneys received by the designated officer of the State or Territory for the further and more complete endowment, support and maintenance of colleges, or of institutions for colored students, as provided in this Act, shall, by any action or contingency, be diminished

or lost, or be misapplied, it shall be replaced by the State or Territory to which it belongs, and until so replaced no subsequent appropriation shall be apportioned or paid to such State or Territory; and no portion of said moneys shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings. An annual report by the President of each of said colleges shall be made to the Secretary of Agriculture, as well as to the Secretary of the Interior, regarding the condition and progress of each college, including statistical information in relation to its receipts and expenditures, its library, the number of its students and professors, and also as to any improvements and experiments made under the direction of any Experiment Stations attached to said colleges with their costs and results, and such other industrial and economical statistics as may be regarded as useful, one copy of which shall be transmitted by mail to all other colleges further endowed under this Act.

SEC. 4. That on or before the first day of July in each year, after the passage of this Act, the Secretary of the Interior shall ascertain and certify to the Secretary of the Treasury as to each State and Territory, whether it is entitled to receive its share of the annual appropriation for colleges, or of institutions for colored students, under this Act, and the amount which thereupon each is entitled respectively, to receive. If the Secretary of the Interior shall withhold a certificate from any State or Territory of its appropriation the facts and reasons therefor shall be reported to the President, and the amount involved shall be kept separate in the treasury until the close of the next Congress, in order that the State or Territory may, if it should so desire, appeal to Congress from the determination of the Secretary of the Interior. If the next Congress shall not direct such sum to be paid it shall be covered into the treasury. And the Secretary

of the Interior is hereby charged with the proper administration of this law.

SEC. 5. That the Secretary of the Interior shall annually report to Congress the disbursements which have been made in all the States and Territories, and also whether the appropriation of any State or Territory has been withheld, and if so, the reasons therefor.

SEC. 6. Congress may at any time amend, suspend or repeal any or all of the provisions of this Act.

Approved August 30, 1890.

Laws of State Relating to the College

In November, 1889, the General Assembly passed the following law, authorizing the establishment of the Clemson Agricultural College of South Carolina:

SECTION 1300. The Honorable Thomas G. Clemson having departed this life on the sixth day of April, A. D. 1888, leaving of force his last will and testament, which was duly admitted to probate on the twentieth day of April, 1888, in the office of the Judge of Probate of the County of Oconee, in the State of South Carolina, wherein he devised and bequeathed to his executor, Richard W. Simpson, of Pendleton, South Carolina, a tract of land situated on Seneca River, in Oconee County, in said State, containing eight hundred and fourteen acres, more or less, known as the Fort Hill plantation, as well as all his other property, both real and personal, except certain legacies in the said will mentioned and provided for, all in trust to convey to the State of South Carolina when the said State shall accept the same for the purpose of establishing and maintaining an Agricultural and Mechanical College upon the aforesaid Fort Hill plantation upon the terms and conditions of said will, the State of South Carolina hereby expressly declares that it accepts

the devise and bequest of Thomas G. Clemson subject to the terms and conditions set forth in his last will and testament, and the Treasurer of the State is hereby authorized and empowered to receive and securely hold the said property, both real and personal, and to execute all necessary papers and receipts therefor as soon as the said executor shall convey and transfer the said device and bequest to the State.

SEC. 1301. The deed and transfer of said property to the State having been duly executed and made by the said executor, in accordance with the provisions of said will, an Agricultural and Mechanical College in connection with the aforesaid devise and bequest, to be styled "The Clemson Agricultural College of South Carolina," and situated at Fort Hill, in Oconee County, on the plantation so devised; in which College shall be taught all branches of study pertaining to practical and scientific agriculture and other industries connected therewith, and such other studies as are not inconsistent with the terms of the said will.

SEC. 1302. The said College shall be under the management and control of a Board of thirteen Trustees composed of the seven members nominated by said will and their successors and six members to be elected by the Legislature in Joint Assembly.

SEC. 1308. One-half of the Land Scrip Fund heretofore vested by Section 1045 of the General Statutes (1882) in the Board of Trustees of the University of South Carolina is hereby vested in the six members of the Board of Trustees of the Clemson Agricultural College elected by the General Assembly; and the State Treasurer is authorized and required to issue a certificate of State stock in the sum of ninety-five thousand nine hundred dollars, bearing interest at the rate of six percentum per annum, payable semi-annually, to the said six members of the said Board of Trustees, to be held as a perpetual fund, the capital of which shall forever remain undiminished, the income of said fund to be

used by said Board of Trustees for the building and maintenance of the said Clemson Agricultural College, in accordance with the purposes for which the said Land Scrip was donated by the Act of Congress in relation thereto.

SEC. 1309. The annual grant of fifteen thousand dollars, commonly known as the Hatch Bill fund, made to the State of South Carolina by the Congress entitled "An Act to establish agricultural experiment stations in connection with the colleges established in the several States under the provisions of an Act approved July second, eighteen hundred and sixty-two, and of the Act supplementary thereto," approved March 2d, 1887, shall be and hereby is, withdrawn from the control of the Board of Trustees of the University of South Carolina, in whom it was vested by an Act entitled "An Act to amend Chapter XX. of the General Statutes, entitled 'Of the University of South Carolina,'" approved December 22, 1887; and the said grant of fifteen thousand dollars is hereby vested in the six members of the Board of Trustees of the Clemson Agricultural College of South Carolina chosen by the General Assembly; and an agricultural experiment station shall be established in connection with the said Clemson Agricultural College, and under the direction of the Board of Trustees thereof, to be supported by said grant according to the provisions of the Act of Congress hereinbefore mentioned.

SEC. 1310. The Department of Agriculture of this State, as heretofore constituted and provided for by law, is abolished, and also the office of Commissioner of Agriculture for this State.

SEC. 1311. All the powers, duties, rights and privileges heretofore vested in and exercised by the Commissioner of Agriculture and the Department of Agriculture of this State are hereby vested in and devolved upon the Board of Trustees of the Clemson Agriculture College of South Carolina, except that said Board shall not have any rights, pow-

ers or privileges in reference to or in connection with the management and control of the rights and interests of the State in the phosphate rock or phosphatic deposits in the navigable streams and marshes thereof.

SEC. 1319. All the privilege tax on fertilizers heretofore required to be paid to the Commissioner of Agriculture shall in the future be paid to the Treasurer of the State, subject to the order of the Board of Trustees of the Clemson Agricultural College of South Carolina; and so much of the money so received as shall be necessary to defray the expenses of the Board in performing the duties now by this Chapter devolved upon them shall be thus used, and the balance shall go to the said College, for its erection and maintenance.

SEC. 1320. A municipal corporation is hereby created, known as Clemson College, the limits of which shall consist of all the lands belonging to the said College and cover all the territory included in a circle formed with the College building as a center, with a radius of five miles, thus making the diameter of the circle ten miles, within which boundaries the jurisdiction of the corporation shall extend. No dispensary shall ever be located at Calhoun.

The General Assembly also passed the following law in reference to the appropriation made by Congress under the provisions of the Act approved August 30th, 1890:

SEC. 1299. All sums which shall be received by the State from the United States Government, under the provisions of the Act of Congress approved August 30th, 1890, entitled "An Act to apply a portion of the public lands to the more complete endowment and support of colleges for the benefit of agriculture and mechanic arts established under the provisions of an Act of Congress approved July 2d, 1862," shall be equally divided between the Colored Normal and

Industrial College and Clemson Agricultural College to the purposes specified in said Act.

The College first opened its doors to the admission of students July 6, 1893, and a large number of boys applied for entrance. Each year since that date, the institution has steadily grown in popularity with the people and has justified the wisdom of the founders in building not only for the benefit of the industrial classes, but for the entire people of the State of South Carolina.

The object of the College, in conformity with the Acts of Congress and of the State Legislature, is to give practical instruction in agriculture and in the mechanic arts. To accomplish this object in its highest sense, careful instruction is given in the principles and applications of the sciences bearing upon agriculture and mechanics, and to give the breadth and culture necessary for a rounded education, courses are provided in history, mathematics, economics and English.

It is considered of the utmost importance that students be taught, not only theoretical methods, but practical work in these methods. To this end, much time is devoted to laboratory and shop-work, field-instruction and other practical exercises, as to lectures and recitations.

Clemson College is not only engaged in providing courses of instruction for the youths of the State, but under the laws of South Carolina it is conducting work of great importance to the farmers, fruit growers, and people engaged in animal industry. There are four departments of experimentation and inspection inaugurated by the Board of Trustees:

1. Experiments in Agriculture (State Experiment Station).
2. Inspection of Fertilizers.
3. Veterinary Inspection.

4. Entomological Inspection.

The first of these divisions is devoted to experiments in subjects relating to investigations of the chemical compositions of plants, rotation experiments, &c.; plant breeding; study of forage plants for hay and pasturage; plant diseases; diseases of animals such as tuberculosis, Texas fever, glanders; feeding of pigs; general dairy experiments; insects injurious and beneficial to plants; studies of varieties of fruits; methods of pruning grape vines.

Although the Station was established for the benefit of the farmers and all the energies of the station are directed for the purpose of carrying out the intent of the law in this regard, still the students of the College are allowed to watch the progress of the experiments, and much of value is obtained by them in addition to the prosecution of the regular courses of study in the College.

The second division, viz: the inspection of fertilizers, is conducted by the Board of Trustees for the protection of the farmers in the State against the introduction of fraudulent brands of fertilizers. The inspectors are appointed by the Board of Trustees and the entire work of issuing tags, the analysis of samples and the enforcement of the law is in the hands of the Board of Trustees of Clemson College. After paying the expenses required for conducting this inspection, all the surplus money is turned over to the College for running expenses and equipment.

The Veterinary inspection is also in the hands of the Board of Trustees.

On the 19th of February, 1901, the General Assembly passed an Act empowering the Board of Trustees of Clemson College to promulgate and enforce rules and regulations for the guidance of the Veterinarian of said College in the treatment or destruction of animals affected with contagious diseases, and to prescribe the powers of the Veterinarian whenever such diseases appear in any part of the State. In

view of the frequent appearance of glanders and other contagious diseases in the State, this law is wise, and great good will result therefrom.

The Entomologist is required by the State law to inspect all nursery stock coming into the State and to prevent the ravages of insects as far as possible.

On the 19th of February, 1901, the General Assembly passed an Act requiring the Board of Trustees of Clemson College to designate three of their number, to be known as the State Board of Entomology. To the said Board was given full power to adopt rules and regulations governing the inspections relative to the sale and transportation of trees, plants, shrubs, cuttings, buds, vines, bulbs, or roots that they may deem advisable to prevent or remove or destroy any insect pests or plant diseases in the State. The Board was also given power to appoint an Entomologist, who should be a skilled Horticulturist, and Assistant Entomologist, if, in their judgment, it would be impossible for the Entomologist to discharge the duties hereby devolved upon him. Such an Entomologist was also given the powers of an inspector with authority to visit in sections of the State where insects injurious to plants are believed to exist, and to determine whether such plants should or should not be destroyed.

Free Analyses, Information, Etc.

The various departments of the College and Experiment Station will furnish, free of charge, advice and information on any topic pertaining to general agriculture, horticulture, botany, entomology, veterinary science, dairying, stock breeding, etc.; also analyses of fertilizers, marls, waters and other substances, assays of ores, determination of rocks and minerals, tests of bricks, cements, building stones, illuminating oils, calibration of electrical instruments, etc.

The departments cannot undertake to analyze stomachs or other parts of poisoned animals, make tests for poisons.

All inquiries and requests should be addressed to the President, giving explicit account of conditions, difficulties, etc., as far as possible, and the matter will be referred promptly to the proper department for further correspondence. Before sending samples of any kind for examination or analysis, it is best to write for instructions, and thus avoid trouble and delay.

Location

The College is located on the dividing line between Oconee and Pickens Counties, in the picturesque foot-hills of the Blue Ridge. It has an elevation of 900 feet above sea level, and commands an excellent view of the mountains to the north and west, some of which attain an altitude of nearly 5,000 feet. The climate is invigorating and healthful, and the surroundings are in every way favorable to the highest physical and mental development. The buildings are located on the old Fort Hill homestead of John C. Calhoun.

The College is one mile from Calhoun, a station on the main line of the Southern Railway, and two miles from Cherry's, on the Blue Ridge Railroad. By means of these roads and their connections, the college is easily accessible from all parts of the State. It is also connected by telephone with Calhoun and Pendleton, and thence by telegraph with all parts of the country. The postoffice is conveniently situated on the campus, and receives five daily mails.

College Grounds and Buildings

GROUNDS.—The College grounds occupy 1,122 acres of land, including the campus, sites of buildings and residences, and grounds for military drill and outdoor athletics, the farm and Experiment Station grounds. The farm is provided with barns, silos and all the other necessary equipment for first class work in farming operations. The campus, about 200 acres, is laid out in walks, drives and lawns, and is shaded by a beautiful grove of native forest trees.

In memory of the lamented R. T. V. Bowman, late instructor in forge and foundry work, the athletic and parade grounds have been named "Bowman Field."

THE MAIN BUILDING is a three-story brick structure, 130x140 feet, trimmed with gray sandstone. It contains twenty-two rooms, including recitation rooms, library and reading room, literary society halls, laboratories for botany, entomology, physics and mineralogy, besides the offices of the President, the Commandant, the Secretary and Treasurer, and Secretary Fertilizer Control. Adjoining this building is Memorial Hall, the College Chapel, which has a seating capacity of 1,000. It is used for religious purposes and an assembly room.

THE MECHANICAL BUILDING is a substantial brick structure containing about 30,000 square feet of floor space. On the first floor are the mechanical laboratory, machine shop, forge shop, foundry, and the power and light station. On the second floor are the offices and recitation rooms, while the wood shop occupies the whole of a two-story wing, 45x100 feet. The third floor is entirely occupied by the division of drawing.

THE CHEMICAL LABORATORY consists of two buildings. One is a two-story brick structure, 50x80 feet, covered with slate, and finished inside with Southern pine. Overlapping this at one corner, and connected with it, is a new and somewhat similar building, 53x86 feet, of modern style and handsome design. This double building constitutes a commodious structure adequate to all the needs of the department.

THE TEXTILE BUILDING is a two-story brick structure with basement, of modern cotton mill design, protected from fire by automatic sprinklers and a 10,000 gallon water tank in the tower. The first floor is occupied by recitation rooms, card-



JOHN C. CALHOUN'S MANSION ON THE COLLEGE CAMPUS

ing and spinning rooms, and office. On the second floor are recitation rooms, the designing and weaving departments. In the basement are located the dyeing, bleaching and printing machinery.

AGRICULTURAL HALL.—The Board of Trustees at their last meeting in March, 1903, appointed a building committee with the authority to select plans and make estimates for an Agricultural Hall, which the Board contemplates erecting within the very near future. This building will provide for the accommodation of the Agricultural Department and its divisions of agriculture, horticulture, botany, bacteriology, entomology and zoology, geology and mineralogy, dairying and animal husbandry, veterinary science, poultry industry and the general museum of the College.

THE CADET BARRACKS comprise two large brick buildings. One is three stories high and contains one hundred and forty-eight rooms for students, a dining hall 134 by 44 feet, and a kitchen 50 by 37 feet. The other building is 199 by 42 feet, and contains 82 rooms. These buildings are heated by steam and lighted by electricity, and have an abundant supply of pure spring water. The rooms in the barracks are furnished with single width iron cots and other necessary appointments. The dining hall is well supplied with table linen, silver ware, and china. The kitchen is furnished with modern culinary appliances.

The bath rooms and closets are located in brick buildings apart from the barracks, and connected with them by covered gangways.

THE ELECTRICAL INSTRUMENT LABORATORY is a brick building of special design. It is arranged especially for delicate instrument work.

THE DYNAMO LABORATORY is a modern brick structure, 37x80 feet. Besides containing the dynamo electric machin-

ery for instructional use, it also contains the electrical engineering lecture room.

THE DAIRY BUILDING is a wooden structure constructed especially to illustrate the most approved methods of dairy practice.

THE VETERINARY HOSPITAL is a two-story frame building, 30x48 feet, with a basement 18x30 feet. It contains a dissecting room, drug room, an office, feed rooms, and apartments for an attendant.

THE HOSPITAL, located about a quarter of a mile from the barracks, is a wooden building, especially designed for the purpose. It is lighted by electricity, and has a thorough sewerage system. The hospital is in the immediate charge of the college surgeon, who is assisted by an experienced matron and nurses, thus ensuring the best personal attention to each patient.

THE CALHOUN MANSION, the former residence of John C. Calhoun, is kept in honor of his memory, in accordance with the provisions of Mr. Clemson's will.

RESIDENCES.—Nine two-story brick buildings, nine six-room cottages, and twenty-six smaller houses furnish residences for professors and other officers of the college.

CLEMSON CLUB HOTEL.—The College Hotel, a frame building, situated on a hill, overlooking the campus, is operated as a club by some members of the faculty. In addition to furnishing a home for the members of the club, it is open the entire year to a limited number of transients.

THE LAUNDRY is a brick building specially constructed and fitted with the improved machinery of a modern steam laundry. It is operated exclusively for students.

EXPERIMENT STATION OFFICES.—A wooden building,

containing offices, a library, and storage and seed rooms, is provided for the use of officers of the Experiment Station.

FARM BUILDINGS.—The College is provided with commodious barns and other farm buildings of modern design, which are described more fully in connection with the equipment for instruction in agriculture.

THE POULTRY YARDS are supplied with incubators, brooders and other modern appliances. There are thirty-six pens, 20x42 feet, each containing a house 6x8 feet. For every four pens there is a run 80x150 feet, all enclosed with poultry cabled wire.

Water Supply

There are two sources from which water is obtained. The general supply is collected from springs through iron pipes into a reservoir, from which it is pumped into a standpipe one hundred feet high, whence it is distributed.

Drinking water is pumped from a bold spring, in a continuous stream, directly into the barracks. It is by this means furnished fresh, pure and cold.

The waste water is used for flushing the sewer pipes, which empty into the Seneca River more than half a mile away.

DEPARTMENTS OF THE COLLEGE
COURSES AND FACILITIES
FOR INSTRUCTION

Departments of the College

The College is divided into seven departments, and presiding over each is a Director who has general supervision of all the work and interests of his department. The divisions are the chairs of the College which are occupied by the Professors, Associate and Assistant Professors, Instructors and Assistants. The following shows this classification of the work of the College:

1. Agricultural Department

1. Agriculture,
2. Geology and Mineralogy,
3. Horticulture,
4. Veterinary Science,
5. Zoology and Entomology,
6. Dairying and Animal Husbandry,
7. Botany and Bacteriology,
8. Poultry.

2. Mechanical and Electrical Department

1. Electrical Engineering,
2. Mechanical Engineering,
3. Drawing and Designing,
4. Forge and Foundry,
5. Woodwork,
6. Machine Shop,
7. Physics.

3. Chemical and Scientific Department

1. Chemistry and Metalurgy.

4. Textile Department

1. Carding and Spinning.
2. Weaving and Designing,
3. Organic Chemistry and Dyeing.

5. Academic Department

1. English,
2. History,
3. Mathematics.

6. Military Department

1. Theoretical and Practical instruction in Military Science and Tactics.

7. Preparatory Department

Laboratories and Facilities for Instruction

Clemson College is well equipped with laboratories for the successful prosecution of every subject relating to biological sciences, textile industry and mechanic arts. The student is offered excellent facilities for acquiring knowledge of a number of the leading professions in agriculture, mechanical and electrical engineering, civil engineering, textile industry, chemical and natural sciences. The institution now possesses facilities for giving instruction in the following laboratories:

1. *Agriculture*.—The farm and pastures connected with this division of the agricultural department, consist in the aggregate of more than 500 acres, and they are equipped with cow barns furnished with various forms of stanchions, mule barns and silos, and cattle of the best breeds, thus giving special advantages to the students in agriculture to derive instruction in reference to this important division of farm life.

2. *Horticulture*.—There is an experimental garden, consisting of five or six acres, with twenty acres in vineyards, orchards and small fruits. There is connected with this division a green-house 21x140 feet, heated with hot water.

3. *Veterinary Science*.—The building for this laboratory is 48x65 feet, provided with steam heat and electric lights, water, gas and all of the necessary furniture. This laboratory is provided with facilities for clinic practice and clinics are given at stated periods for the benefit of the farmers as well as for the students. The Veterinary hospital contains besides the offices, stalls, feed bins, and apartments for dissecting and horse-shoeing. One of the best revolving operating tables and a supply of surgical instruments and appliances places this laboratory in a position to furnish

instruction of special importance to students in veterinary science.

4. *Geology and Mineralogy*.—The laboratory is well supplied with specimens of minerals, for lecture illustration and for blowpipe practice. There are many specimens of rocks and fossils. In connection with this laboratory there is a petrographic microscope and a photomicrographic camera and all important accessories, 20-inch relief globe, a set of geographical and geological relief models and several hundred lantern slides.

5.—*Zoology and Entomology*.—The laboratory of this division occupies a room on the second story of the main building. It is equipped with simple and compound microscopes, microtomes, dissecting instruments, photographic outfit, stereopticon, lantern slides and charts. The entomological cabinet contains a large number of injurious and beneficial insects, and this cabinet is still growing.

6. *Botany and Bacteriology*.—This laboratory is also located in the main building in the third story. It has a northern exposure which makes it especially suitable for work with the microscope. In this laboratory are to be found simple and compound microscopes in sufficient numbers for a class of twenty-two. All of the necessary apparatus and appliances for satisfactory work in botany and bacteriology are to be found in this laboratory. A creditable beginning has been made in the installation of an herbarium. This collection includes plants from the State of South Carolina, also some received by exchange and about twenty-five hundred mounted specimens donated by Dr. A. P. Anderson.

7. *Dairying and Animal Husbandry*.—The dairy building is provided with steam plant and water works, and everything required for making butter and cheese. In this labor-

atory are located the leading makes of cream separators, churns, and milk-testers. A new barn has just been completed provided with modern apparatus and conveniences for the proper handling of cattle, and the following breeds of cattle have been recently purchased and placed at this barn for experimental purposes: Ayrshire, Devon, Jersey, Hereford, Polled Angus, Polled Durham, Short-horn (bare-faced dairy strains), Guernsey, Holstein.

8. *Poultry Industry*.—The poultry yards are provided with incubators, brooders, and other appliances for the proper raising of chickens. There are 36 pens 20x32 feet each containing a house 6x8 feet. For every four pens, there is a run of 80x150 feet, all enclosed with poultry cabled wire.

9. *Electrical Laboratory*.—A brick building is designed especially for the delicate electro-magnetic work, in which there is no iron, steel or other magnetic substances used in its permanent construction. This building is equipped with all standard instruments of the best approved pattern for high grade electric work. For a detailed description of these instruments and appliances, see account given in another portion of this catalogue.

The Dynamo Laboratory.—In connection with this division is another building in which the dynamo electric machine is installed. Here may be found direct current generators, direct current motors, direct current instruments, arc lighting apparatus, alternating current apparatus. There is also attached to this laboratory a dark room containing a complete outfit for high potential, high frequency and X-ray work, and a Deshler-McAllister central station type photometer with rotating stand for incandescent lamp testing.

10. *Mechanical Laboratory*.—This laboratory occupies a room 41x45 feet, and contains the following equipment:

For steam engineering: 15-horse power horizontal, locomotive type boiler; 6-horse power vertical boiler; Erie 6-horse power plain slide-valve steam engine; 6-horse power vertical steam engine built in the shops; Corliss cross-compound condensing steam engine arranged so that either side may be run condensing or non-condensing and each side independent of the other; Wheeler surface condenser with combined air and circulating pumps; set of steam-gauge testing apparatus; Carpenter's separating steam calorimeter; two throttling steam calorimeters; five steam engine indicators of various makes; two standard injectors. For hydraulic engineering: two hydraulic rams; Pelton water motor; power triplex pump; three duplex pumps of different makes; three weirs; recording altitude gauge; 6 pressure and altitude gauges. For compressed air: Clayton air compressor with jacketed cylinders; improved air motor. For fuel and lubricants: Carpenter's fuel calorimeter, with scales, balances, and oxygen generating devices; standard viscometer. For testing building materials: 100,000-pound Olsen automatic vertical testing machine driven by 5-horse power Westinghouse electric motor, and fitted for tension, compression, and transverse testing; Fairbank's cement testing machine, 3,000-pound transverse testing machine. The laboratory also contains a 5-horse power Otto gasoline engine, an Ericsson hot-air engine, a 6-horse power transmission dynamometer, graduated to read horse power direct and built by students, and an assortment of standard thermometers, weights and measures. The apparatus is so arranged that any of it may be used for separate or combined tests, or for any original investigations.

11. *Drawing*.—In this laboratory all students pursuing courses in civil engineering, mechanical and electrical engineering are taught drawing and designing. The drawing rooms occupy the entire third floor of the mechanical build-

ing. In these rooms are to be found a good selection of drawing instruments with cases for the instruments, drawing boards, and T-squares for over 200 students.

12. *Wood-work*.—The wood shop occupies the two-story wing on the east side of the Mechanical Engineering building, 45x100 feet. The lower floor contains the Freshman Class room, equipped with fifteen work benches and sets of tools, six turning lathes, with tools for each, and other tools for hand work. On this floor is also the planing mill machinery, consisting of a double roll planer, power rip and cut-off saws, band saw, scroll saw, 16-inch jointer, moulding machine, mortising machine, tenoning machine, emery grinder, lathes with 12-foot bed, etc.

The upper floor is devoted to the work for the Sophomore Class, and is fitted up with fifteen work benches and sets of tools, six 10-inch turning lathes, one large pattern lathe, one combination saw and boring machine, one double-headed shaper, with a full set of cutters, one power carving machine, jig saw, one universal trimming machine, special door and sash clamps, steam glue pots, mitre cutters, etc.

Power is supplied by electric motors conveniently located in the various rooms. A large lumber yard and dry-kiln provide seasoned lumber at all times.

13. *Machine-work*.—The machine shop is located in the southwest wing of the Mechanical building, and contains eighteen benches, with vises, 110 kits of tools and the following machine tools: 1 18-in.x12-foot engine lathe; 1 18-in.x8-foot engine lathe; 3 14-in.x6-foot engine lathes; 4 14-in.x6-foot Lodge & Shipley lathes; 1 10-in.4-foot F. E. Reed pattern maker's lathe; 1 15-in.x8-foot speed lathe; 1 18-in. drill press; 1 28-in. back geared drill press; 1 22-in.x22-in.x6-foot Powell planer; 1 Cincinnati cutter and tool grinder; 1 15-in. Gould and Eberhardt crank shaper; 1 dry emery grinder; 1 12-in. power hack saw; 1 36-in. grind-

stone; 1 22-in. Leland and Faulconer wet emery tool grinder; 1 American twist drill grinder; 2 14-in.x6-foot F. E. Reed compound rest engine lathes; 2 14-in.x6-foot Hendey compound rest engine lathes; 1 10-in. clotting machine, built by New Haven Mfg. Co.; 1 fan; 1 forge. The tool room in connection with the shop contains all tools necessary for use with the machines.

14. *Forge and Foundry.—Forge Shop.*—This is a room 37x60 feet, situated in a wing of the Mechanical building. It is equipped with 18 Buffalo down draft forges and steel-faced anvils, with sets of hammers, tongs, swages, fullers, flatters, etc. Continuous blast is furnished by a Buffalo blower driven by a 15 H. P. electric motor, the down draft being produced by a 60-inch Buffalo exhaust fan. The shop is also supplied with vises, swage blocks, emery wheel, bending cone, drill-press, bolt shears, &c.

Foundry.—This building occupies a space 43x76 feet. It is equipped with a 26-inch Victor Collian cupola, a Millett's improved core oven, a two-ton post crane, 8 improved moulder's benches, an 18-inch brass furnace, with its usual complement of crucibles, tongs, etc., full sets of moulder's tools for the accommodation of 20 students, besides the usual accessories to the foundry, such as ladles, flasks, etc.

15. *Physical Laboratory.*—In this laboratory the student performs all the experiments illustrating the lectures and the text-book work in the recitation room. This division of the College is equipped with apparatus for both the lecture and experimental work of a general course in Physics.

16. *Civil Engineering.*—All of the necessary instruments for field work including vernier compasses, level, transit with solar attachment and stadia, telescope, plane-table, leveling rods, Gurley's clinometer reading to degrees, chains, steel tape flag poles and other accessories.

17. *Chemical Laboratories.*—On the first floor of the old building, which is used for academic work, there are five rooms. Two of these, connecting with each other, are employed as a laboratory for the Agricultural Seniors. Of the other rooms on this floor, one is a laboratory for post-graduate students and one a balance room, while the third is reserved for such use as the ever increasing demands upon the Department may require.

On the second floor of this building, there are two large laboratories, one for the Juniors in Analytical Chemistry, the other for the Sophomores in General Chemistry. A third and smaller room is used as a balance room.

The Junior laboratory will accommodate thirty-six students, the Sophomore laboratory, sixty students at a time. The laboratories are all provided with hoods for carrying on noxious gases, convenient working tables, water, gas, electric lights, and all necessary appliances for experimental work.

The basement of the building is used for assaying, for the preparation of distilled water and for storage.

On the first floor of the new building there are nine rooms, all of which are appropriated to the chemical work of the State and of the Experiment Station.

On the second floor of this building are seven rooms; a lecture room, and six smaller rooms which are used for recitations, cabinets, apparatus, chemicals, library and Professor's laboratory.

An electric motor supplies the power which drives the machinery for grinding and pulping samples of vegetable substances.

18. *Laboratories in Textile Industry.*—In this department are laboratories for practical instruction in carding and spinning, designing, Textile chemistry and Dyeing. The student is carried through a complete course of work from handling the raw material, opening and mixing, carding,

spinning and weaving. The designing of the special pattern represented in the cloth is accomplished by the student on paper and it is then worked into the cloth on the loom. In the dyeing room of this department the course in organic chemistry is designed to introduce the student to the scientific methods of manufacturing dyes and the general use of coloring matters found in the factories where colored goods are manufactured.

The textile building is equipped with the necessary machinery of approved patterns to be found in the best mills of the country. For a detailed account of these machines see elsewhere in this catalogue under the head of the description of work in the department.

19. *Military Tactics*.—Instruction in this department is in accordance with the Act of Congress, and the course consists of drills in the school of the soldier. The department is supplied with a full stand of guns and accoutrements, and two rifled artillery pieces.

Course in Agriculture

Freshman Class

	Hours per week			Hours per week	
	1st Term	2d Term		1st Term	2d Term
THEORETICAL.			PRACTICAL		
Mathematics... ..	5	5	Woodwork	3	3
English... ..	5	5	Mech. Drawing... ..	3	3
History... ..	3	3	Freehand Drawing	4	4
Agriculture... ..	2	2	Forge work... ..	3	3
			Drill, 45 minutes.		

Sophomore Class

Mathematics... ..	5	4	Surveying... ..	0	2
English... ..	3	3	Drawing Freehand	3	0
Chemistry... ..	3	3	Chemical Lab... ..	4	4
Physics... ..	2	2	Animal Husbandry	0	2
Agriculture... ..	2	2	Agriculture	2	3
History... ..	3	2			
Physiology... ..	0	2	Drill, 45 minutes.		
Animal Husbandry	2	1			

Junior Class

English... ..	2	2	Chemical Lab....	6	6
Chemistry... ..	2	2	Horticulture... ..	2	0
Horticulture	2	2	Agri. Soil Phys... ..	2	2
Botany	2	2	Botany	0	2
Zoology... ..	2	2	Zoology... ..	0	2
Veterinary Science	2	2	Veterinary Science	0	2
Dairying... ..	2	0	Dairying... ..	3	0
Military Science..	1	1	Mineralogy... ..	2	2
			Drill, 45 minutes.		

Senior Class

English... ..	2	2	Chemical Lab....	6	6
Political Economy.	0	3	Bacteriology	2	2
Chemistry	2	2	Entomology	2	2
Geology... ..	3	2	Horticulture... ..	0	2
Animal Husbandry	0	2	Veterinary Science	3	3
Bacteriology... ..	2	0			
Entomology	2	0			
Veterinary Science	2	2			
Military Science..	1	1	Drill, 45 minutes.		

Course in Biology

Freshman Class

Hours per week			Hours per week		
THEORETICAL	1st	2d	PRACTICAL	1st	2d
	Term	Term		Term	Term
Mathematics... ..	5	5	Woodwork... ..	3	3
English... ..	5	5	Mech. Drawing... ..	3	3
History... ..	3	3	Freehand Drawing	4	4
Agriculture... ..	2	2	Forge Work	3	3
			Drill, 45 minutes.		

Sophomore Class

Mathematics... ..	5	4	Surveying... ..	0	2
English... ..	3	3	Drawing Freehand	3	0
Chemistry... ..	3	3	Chemical Lab... ..	4	4
Physics... ..	2	2	Animal Husbandry	0	2
Agriculture	2	2	Agriculture... ..	2	3
History	3	2			
Physiology	0	2			
Animal Husbandry	2	1	Drill, 45 minutes.		

Junior Class

English... ..	2	2	Chemical Lab... ..	6	6
Chemistry... ..	2	2	Botany... ..	4	5
Botany... ..	2	2	Zoology... ..	4	5
Zoology... ..	2	2	Physics... ..	3	3
Physics... ..	2	2	Mineralogy... ..	2	0
Military Science..	1	1	Drill, 45 minutes.		

Senior Class

English... ..	2	2	Chemical Lab... ..	6	6
Political Economy.	0	3	Bacteriology... ..	6	5
Chemistry... ..	2	2	Zoology... ..	6	5
Bacteriology... ..	2	1			
Zoology... ..	2	1			
Geology... ..	3	2			
Military Science..	1	1	Drill, 45 minutes.		

Course in Mechanical and Electrical Engineering

Freshman Class

	Hours per week			Hours per week	
	1st	2d		1st	2d
	Term	Term		Term	Term
THEORETICAL			PRACTICAL		
Mathematics...	5	5	Woodwork...	3	3
English...	5	5	Mech. Drawing ..	3	3
History...	3	3	Freehand Drawing	4	4
Agriculture...	2	2	Forge Work...	3	3
			Drill, 45 minutes.		

Sophomore Class

Mathematics...	5	4	Surveying...	0	2
English...	3	3	Woodwork...	3	3
Chemistry ..	3	3	Mech. Drawing ..	3	2
Physiology ..	0	2	Foundry...	3	3
Physics...	2	2	Chemical Lab. ...	4	4
History...	3	2	Descriptive Geo...	0	2
			Drill, 45 minutes.		

Junior Class

Mathematics...	5	5	Machine Shop	3	3
Physics...	2	2	Mech. Drawing...	3	3
Elec. Engineering.	3	3	Elec. Laboratory..	3	3
Mechanics...	2	2	Phys. Laboratory.	3	3
English...	2	2	Mineralogy...	2	2
Military Science..	1	1	Drill, 45 minutes.		

Senior Class

Mechanical and			Shopwork...	3	3
Steam Engineer-			Machine Design..	3	3
ing...	5	5	Elec. Laboratory..	3	3
Elec. Engineering.	5	5			
Political Economy.	0	3			
English...	2	2	Mech. Laboratory.	3	3
Military Science..	1	1			
Geology...	3	0	Drill, 45 minutes.		

Course in Civil Engineering

Freshman Class

	Hours per week			Hours per week	
	1st	2d		1st	2d
	Term	Term		Term	Term
THEORETICAL			PRACTICAL		
Mathematics... ..	5	5	Woodwork... ..	3	3
English... ..	5	5	Mechanical Draw. .	3	3
History... ..	3	3	Freehand Draw... .	4	4
Agriculture... ..	2	2	Forge Work	3	3
			Drill, 45 minutes.		

Sophomore Class

Mathematics... ..	5	4	Surveying... ..	0	2
English... ..	3	3	Drawing... ..	3	2
Physiology... ..	0	2	Woodwork... ..	3	3
Chemistry... ..	3	3	Foundry	3	3
Physics... ..	2	2	Chemical Lab... ..	4	4
History... ..	3	2	Descriptive Geo ..	0	2
			Drill, 45 minutes.		

Junior Class

Mathematics... ..	5	5	Drawing... ..	3	3
Physics... ..	2	2	Civil Eng. Field		
Civil Eng... ..	3	3	Work... ..	4	4
Mechanics... ..	2	2	Machine Shop....	3	3
English... ..	2	2	Mineralogy ..	2	2
Military Science..	1	1	Physical Lab... ..	3	3
			Drill, 45 minutes		

Senior Class

Civ. Engineering..	5	5	Civil Engineering		
Mechanics and Me-			Field Work....	6	6
chanical Eng... ..	5	5	Drawing and De-		
Geology... ..	3	0	signing... ..	3	3
English... ..	2	2	Mechanical Lab... .	3	3
Political Economy.	0	3			
Military Science..	1	1	Drill, 45 minutes.		

Course in Metallurgy

Freshman Class

	Hours per week			Hours per week	
	1st	2d		1st	2d
	Term	Term		Term	Term
THEORETICAL			PRACTICAL		
Mathematics... ..	5	5	Woodwork.	3	3
English... ..	5	5	Mechanical Dr. . .	3	3
History... ..	3	3	Freehand Dr. . .	4	4
Agriculture... ..	2	2	Forge Work... ..	3	3
			Drill, 45 minutes.		

Sophomore Class

Mathematics... ..	5	4	Surveying... ..	0	2
Physics... ..	2	2	Drawing... ..	2	2
Physiology... ..	0	2	Mech. Drawing... ..	3	2
Chemistry... ..	3	3	Chemical Lab....	4	4
English... ..	3	3	Foundry... ..	3	3
History... ..	3	2	Drill, 45 minutes.		

Junior Class

Chemistry... ..	2	2	Mechanics... ..	2	2
Physics... ..	2	2	Chemical Lab....	8	8
Mechanics... ..	2	2	Physical Lab... ..	3	3
Mineralogy... ..	0	3	Mineralogy... ..	3	3
Geology... ..	3	3	Metallurgical De-		
English... ..	2	2	sign... ..	2	2
Military Science... ..	1	1	Metallurgy (As-		
			saying)... ..	0	4
			Drill, 45 minutes.		

Senior Class

Chemistry... ..	3	3	Chemical Lab....	8	8
Econ. Geology... ..	3	3	Mechanical Lab... ..	3	3
Petrology... ..	3	0	Petrology... ..	2	0
Metallurgy... ..	2	2	Geol. Field Work,		
English... ..	2	2	equivalent to... ..	2	2
Political Econ....	0	3	Thesis, equivalent		
Military Science... ..	1	1	to... ..	0	2
			Drill, 45 minutes.		

Course in Textile Industry

Freshman Class

	Hours per week			Hours per week	
	1st Term	2d Term		1st Term	2d Term
THEORETICAL			PRACTICAL		
Mathematics...	5	5	Woodwork...	3	3
English...	5	5	Mech. Drawing... . .	3	3
History...	3	3	Freehand Drawing	4	4
Agriculture...	2	2	Forge Work... . .	3	3
			Drill, 45 minutes.		

Sophomore Class

Mathematics...	5	4	Mech. Drawing . . .	3	2
English...	3	3	Foundry...	3	3
Chemistry...	3	3	Chemical Lab.....	4	4
Physics...	2	2	Descriptive Geo... .	0	2
History...	3	2	Surveying...	0	2
			Drill, 45 minutes.		

Junior Class

Mathematics...	5	5	Chemical Lab.....	4	4
Textile Chem... . .	2	2	Carding and Spin-		
Carding and Spin-			ning...	4	4
ning...	2	2	Weaving...	3	3
Designing...	2	2	Machine Shop. . .	3	3
English...	2	2			
Mechanics...	2	2			
Military Science... .	1	1			

Senior Year

Textile Chem... . .	2	2	Dyeing...	4	4
Carding and Spin-			Carding and Spin-		
ning...	2	2	ning...	4	4
Designing...	2	2	Weaving...	6	6
Cloth Analysis . . .	2	0	Cam Drawing....	2	0
Jacquard Design-			Mech. Lab...	0	3
ing and Tie-ups.	0	2			
English	2	2			
Political Econ... . .	0	3			
Mechanical Eng... .	3	0			
Military Science... .	1	1			

Special Course in Textile Industry

First Year

	Hours per week			Hours per week	
	1st	2d		1st	2d
	Term	Term		Term	Term
THEORETICAL			PRACTICAL		
Textile Chem. . . .	2	2	Chem. Laboratory.	4	4
Carding and Spin-			Carding and Spin-		
ning.	2	2	ning.	4	4
Designing.	2	2	Weaving.	6	6
Mechanics.	2	2	Freehand Draw. . .	3	3
			Mech. Drawing. . .	3	3
			Surveying	0	2

Second Year

Textile Chem. . . .	2	2	Dyeing.	8	8
Carding and Spin-			Carding and Spin-		
ning.	2	2	ning.	4	4
Designing.	2	2	Weaving.	6	6
Cloth Analysis. . .	2	0			
Jacquard Design-					
ing and Tie-ups	0	2			

Three hours throughout session elective.

Instruction and Equipment

General Agriculture

DIRECTOR NEWMAN

ASSISTANT PROFESSOR BENTON

This study is pursued in all of the classes, commencing with the elementary principles in the Freshman year. During this year the instruction is confined to the application of fundamental principles which do not require a knowledge of the sciences related to agriculture, embracing a broad foundation for future study.

As the student progresses in the study of the natural sciences, the application of these sciences is taught in their relation to the art of agriculture, special stress being placed upon the protection, improvement, fertilization, and all manipulations of the soil in the preparation for planting and in the cultivation of crops.

The cultivation of each important crop is discussed in the concrete. Special attention is bestowed upon the grasses and their cultivation. The employment and management of labor, farm equipment, and farm management are also discussed.

Text-books used in Freshman Class: Elements of Agriculture, by J. B. McBryde; Principles of Agriculture, by L. H. Bailey.

Reference-books: Voorhees' First Principles of Agriculture, Storer's Agriculture, Experiment Station Bulletins, Leading Periodicals.

Equipment

The College has a large storage barn provided with silos, a cow barn furnished with various forms of stanchions, a mule barn provided with the most improved forms of stalls

and feed-racks, implement and wagon sheds for storage of tools, etc., compost building for making compost in large quantities, and two large cribs for storage of corn.

Among agricultural machinery and implements may be mentioned the following: Self-binder, corn-harvester, Deering ball-bearing mower, Osborne mower, self-dumping rake, check-row corn planter, Buckeye cultivator, B. F. Avery cultivator, Tower cultivator, disc-cultivator, spring-toothed harrow, smoothing harrows, various forms of pulverizers, manure-spreading machines, fertilizer and grain drill, various forms of small fertilizer drills, Planet, Jr., drill, two Planet, Jr., plows, scientific mill, stone grist mill, Tornado ensilage cutter, small thresher, hand-gin, rock-crusher, road machine, three terrace levels, and a 10-kw. electric motor.

Geology and Mineralogy

PROFESSOR LEWIS

Junior Class

FIRST TERM.—*Mineralogy*.—The elements of crystallography, with laboratory study of crystal forms by the use of models and natural crystals and the construction of simple crystal drawings; the chemical and physical properties of minerals; classification and description of minerals.

SECOND TERM.—*Determinative Mineralogy*.—Practical study of the common minerals by determinative work in the laboratory, by comparison with the labeled specimens of the systematic collection, and by the use of unlabeled collections for practice in identifying minerals at sight.

Agricultural Juniors

BOTH TERMS.—*Soil Physics*.—Practical studies of the constitution and physical properties of soils and their relations to heat, moisture, and air; determination of physical

conditions of soil best suited to retention of moisture, drainage, development of root structure, utilization of plant food, and growth of different species of plants; effects of cultivation on the mechanical condition of soils.

Junior Class in Metallurgy

BOTH TERMS.—*Geology*.—A broad course in the elements of general geology. Special stress is laid on structural and dynamical geology in their relations to the formation and metamorphism of rocks and the deposition of minerals and ores. The course also includes a historical study of the continent of North America, with brief references to other countries.

Agricultural Seniors

BOTH TERMS.—*General Geology*.—The elements of dynamical, structural, and historical geology. The influences of geologic phenomena on man are emphasized, particularly in the study of rock-decomposition and the formation of soils, the processes of erosion and deposition, and the resultant topographic forms. In historical geology special attention is given to the development of the North American continent.

SECOND TERM.—*Economic Geology*.—A supplementary course of about twenty lectures given upon the completion of the text-book course in general geology. Brief notes upon the origin and general characters of ore-deposits, the ores of the more useful metals, the origin and distribution of the principal non-metallic minerals of value.

Engineering Seniors

FIRST TERM.—*Geology*.—This course is designed to furnish a general knowledge of the science, with special emphasis on dynamical and structural geology in their relations to engineering materials and practice. The course is fully illustrated by maps, specimens, and lantern slides.

Senior Class in Metallurgy

FIRST TERM.—*Petrology*.—The origin, structure, composition, distribution, and modes of occurrence of the various families of rocks. Practical work in methods of investigation in field and laboratory, including an introduction to the use of the petrographic microscope.

BOTH TERMS.—*Economic Geology*.—A general survey of geological products of value, metalliferous and non-metalliferous, including the study of their origin and nature, their geographic distribution and geologic modes of occurrence. The course deals particularly with the economic deposits of North America, but references are frequently made to those of other countries for purposes of comparison and for the elucidation of questions of origin, etc.

Equipment

The systematic collections contain over a thousand labeled specimens of rocks, minerals, and fossils. These are exhibited in glass cases in the laboratory, and are available to students. There is also an unlabeled collection of minerals for practice in identifying the more important species at sight, and unlabeled collections of the most useful minerals are provided for determinative work in the laboratory.

The laboratory is supplied with water and gas and all apparatus and reagents necessary for the determination of minerals by means of their chemical and physical properties. A chemical balance is also provided, and a petrographic microscope, with photomicrographic camera and all important accessories.

The class-room is supplied with large physical wall maps of the world and of all the continents, a select series of topographic contour-maps furnished by the United States Geological Survey, an 18-inch terrestrial globe, a 20-inch relief globe, a set of geological and geographical relief models, and several hundred lantern slides.

The library of the department contains the principal standard works of reference in geology and mineralogy, and receives all publications of the United States Geological Survey as issued, including annual reports, monographs, geologic folios, and bulletins.

The laboratory for soil physics is provided with all apparatus necessary for performing experiments, making mechanical analyses of soils, moisture determinations, etc.

Veterinary Science

ASSOCIATE PROFESSOR NESOM

ASSISTANT SHEALY

The object of this course is to acquaint the agricultural student with the elementary principles of anatomy and physiology, veterinary medicine and surgery. The time is too short to make professional veterinarians of those who take this study, but is sufficient to make them more intelligent stockmen when graduated.

The instruction begins with the second term in the Junior year of the Agricultural course and is given as follows:

Junior Class

Anatomy, Physiology and Histology of the domestic animals, two hours a week class room both terms and two hours a week laboratory second term. Texts, "A Manual of Veterinary Physiology," F. Smith; "Manual of General Histology," Wm. S. Gottheil.

Senior Class

FIRST TERM.—Surgery, Materia Medica and Pharmacy, two hours a week class room and three hours a week clinic and laboratory. Lectures on Surgery and Pharmacy. Text: "A Compend of Veterinary Materia Medica and Therapeutics," A. C. Hassloch.

SECOND TERM.—Lectures on the Principles and Practice of Veterinary Medicine, two hours a week and three hours a week clinic.

Only the more common diseases of farm animals can be considered during the limited time devoted to this study, but special attention is given to those diseases that occur in epizootic outbreaks. Among these may be mentioned glanders, anthrax, Texas fever, tuberculosis, cholera, sheep "scab," hydrophobia, and favus. Careful consideration is given to the bacteriological and parasitic agencies causing the diseases.

LABORATORY.—Laboratory work is given during the lectures to illustrate the structure of normal and pathologic tissues and the simpler reactions in chemical physiology. In pharmacy each student is required to compound a limited number of prescriptions.

CLINIC AND DISSECTION.—Every Monday afternoon a free clinic is held at the veterinary hospital. This is liberally patronized by the stockmen of the surrounding country, and affords the students ample practical work in surgical operations and the treatment of animal diseases. Advantage is taken of accidental material for post-mortem examination and gross dissection.

POST-GRADUATE AND SPECIAL WORK.—Graduates of this and other colleges and young men found proficient in the elementary branches of science and literature may receive special instruction. This work is designed as a preparatory course to entrance into a regular veterinary college. The special needs of each student are considered, and the work is planned to meet his individual case. The course taken here will shorten the time necessary for graduation from the leading veterinary colleges, whether the student desires to become a veterinary practitioner, government meat-inspector, or army veterinarian.

Equipment

The veterinary class-room and laboratory is about 30x50 feet, provided with steam heat, electric lights, water, gas, and the necessary furniture. It is amply supplied with stereopticon, microscopes, microtome, skeletons, anatomical specimens, plaster casts, chemicals and the best apparatus for technical work.

The veterinary hospital is a structure of modern design, 48x65 feet, containing rooms for office, drugs, dissecting and horse-shoeing, besides stalls, feed-bins, water supply and electric lights. One of the best revolving operating tables has been provided. The surgical instruments and appliances now on hand, with a few additions, would do credit to a regular veterinary college. A complete outfit for horse-shoeing is provided. A good stock of drugs and chemicals is kept on hand and prescriptions are filled on request.

Horticulture

ASSOCIATE PROFESSOR C. C. NEWMAN

The course in horticulture consists of horticulture proper, home gardening, truck farming, pomology, viticulture, canning and experiment work.

Instruction is given by text-book and lectures, covering the subject of horticulture in its comprehensive sense.

Instruction is given in Junior and Senior classes and is illustrated by practical exercises in the garden, the orchard, the vineyard and the greenhouse.

In the practical work, the student is required to labor, and is thereby taught by actual experience the use of tools, the proper mode of preparing, fertilizing and cultivating the soil; shipping, storing, and canning vegetables and fruits; training and pruning vines and trees; propagating plants by seeds, grafts, buds, layers, leaves, and division. Instruction is

also given in the making and use of hot-beds, cold-frames, mulching, etc., together with the art of forcing, crossing, and hybridizing, and the care of plants in the greenhouse.

Equipment

The equipment for practical instruction in horticulture consists of the following: canning outfit complete; greenhouse, 21x140 feet, heated by hot water; experiment garden, about five acres; orchard, vineyard, and plats of small fruits, twenty acres, and a small nursery.

Zoology and Entomology

ASSOCIATE PROFESSOR CHAMBLISS

The instruction in this division is largely conducted by the laboratory method with lectures and recitations, and is so given as to lead the student to observe and think for himself, as well as to secure a working knowledge of the science for practical purposes.

Sophomore Class

PHYSIOLOGY.—An elementary course in which the physiology of digestion, circulation and excretion will receive special attention. The instruction will serve as a basis for hygiene and as an aid to those who may teach in public schools.

Junior Class

GENERAL INVERTEBRATE ZOOLOGY.—This course includes a general discussion of groups, and dissection of types, especially of the forms related to insects, and is further extended to lay a foundation for a knowledge of animal development. Animals of economic importance are given special attention.

Books of Reference: Invertebrate Morphology (McMurrich); The Riverside Natural History; Text-book of Zoology (Parker & Howell).

Senior Class

ECONOMIC ENTOMOLOGY.—By laboratory studies and field work, the students, in this course, will be made familiar with the most important injurious insects. For the systematic and biological work, a collection of one hundred species, with full notes on the habits of twenty-five, will be required. The practical work will consist of the preparation and application of insecticides.

Text-book: Manual for the Study of Insects (Comstock); Elements of Insect Anatomy (Comstock & Kellogg).

Books of Reference: Insects Injurious to Fruits (Saunders); Economic Entomology (Smith); Guide to Study of Insects; and a Text-book of Entomology (Packard); U. S. Government, Experiment Station and State Publications on Entomology.

Equipment

The Zoological and Entomological Laboratory is located in Agricultural Hall. The equipment includes compound and simple microscopes, an automatic laboratory microtome, dissecting instruments, camera, stereopticon, lantern slides and charts. The entomological cabinet contains a large number of injurious and beneficial insects of South Carolina. The students have access to a small but carefully selected entomological library.

Botany

ASSOCIATE PROFESSOR METCALF

JUNIOR CLASS.—During the Junior year instruction is given in general botany. The flowering plants are first studied, and especial attention given to plant physiology; afterward a rapid survey of the whole plant kingdom is made by a study of types. While the work is necessarily very general, it serves to show the bearing of the results of mod-

ern botanical research on the problems underlying the cultivation of plants.

SENIOR CLASS.—The first half year is devoted to a general course in bacteriology. The nature and distribution of bacteria, the facts underlying the phenomena of decay and disease, the hygiene of contagious diseases, and the elaborate technique of practical work in the science, form the subject matter of the course.

The second half year is devoted to the study of the diseases of economic plants. The class first studies Pear Blight as a typical disease, producing the disease by inoculation and watching its progress and effect. Other diseases induced by plant parasites are then studied from the systematic standpoint of the parasite; the students are taught to recognize the more common diseases, particularly in the early stages; and the whole question of prevention and of practicable remedies is fully discussed.

Equipment

The botanical laboratories are located on the third and fourth floors of the main building. They contain a good equipment for such work as is given, including twenty-five dissecting microscopes, fourteen compound microscopes, student dissecting sets, student microtomes, Zimmermann microtome, embedding baths, balances, water still, incubator, Arnold and Koch sterilizers, autoclave, dry ovens, anaerobic apparatus, cameras for ordinary and photomicrographic work.

The students have access to a small botanical library.

A creditable beginning has been made in collecting a herbarium. This now includes plants collected in the State, plants received by exchange, and a donation of about twenty-five hundred mounted specimens from Dr. A. P. Anderson, which includes many species not present in the flora of South Carolina.

A complete collection of all economic plants grown within the limits of the State is contemplated; upon this a beginning has already been made.

Dairy and Animal Husbandry

ASSISTANT PROFESSOR UPTON

Sophomore Class

STOCK BREEDING.—A careful study of the different types of domestic animals is pursued, and the student is thoroughly drilled in the principles and methods of successful breeding, heredity, atavism, variation, selection, fecundity, influence of environment, in-breeding, cross-breeding, grading, influence of previous impregnation.

The different breeds of horses, cattle, sheep and swine are considered, and those best adapted to the South are discussed at length.

The College farm has a number of breeds of domestic animals which serve to illustrate the subject.

As a supplement to this work, the student is drilled in the use of the score-card, which fixes the different types and breeds firmly in his mind.

Junior Class

Students who take the course in Agriculture receive instruction in the formation and management of a dairy, care of the cows, and feeding for milk production. A short course for special students is in contemplation.

In the dairy building the instruction is supplemented by practical work in the care of milk, separation of cream, making butter and cheese, and testing milk and its various products.

The text-book used is Wing's "Milk and its Products," in



THE DAIRY



addition to which the latest methods are gleaned from the various experiment station bulletins.

Those wishing to take a short course in practical work can enter February 1st and continue for ten weeks, during which time instruction will be given similar to that in the regular course.

Students taking the short course must be employed as many hours per week as those in the regular course.

Board and tuition will be the same as for other students in the regular course.

Senior Class

STOCK FEEDING.—This course includes the following subjects: Laws of animal nutrition; composition of the animal body; fodders as a source of nutrients; digestion, resorption, circulation, respiration, and excretion; formation of muscle, flesh and fat; composition and digestibility of feeding stuffs, and their preparation and use; feeding for fat, for milk, for wool, for work and for growth.

The available feed-stuffs of the South are discussed at length. Henry's "Feeds and Feeding" is used as a textbook.

Equipment

The commodious dairy building has an independent steam plant and water works, and is supplied with everything needed for making butter and cheese on a factory and private dairy scale, including the leading makes of cream separators, churns, butter-workers, milk-testers. Students are thoroughly drilled in the use of this apparatus.

The Experiment Station has a new dairy barn, with silos and feed rooms to illustrate the sanitary production of milk and scientific feeding of cattle.

Poultry Industry

ASSISTANT WATSON

Instruction in this division will embrace a careful study of the origin, and the qualities of the different breeds of poultry, and the student is thoroughly drilled in the principles and methods of successful poultry breeding.

Instruction is given by lectures. Practical work will be done in caponizing, management of incubators and brooders, and judging of fowls by comparison and by score card system.

THE POULTRY YARDS are supplied with incubators, brooders and other modern appliances. There are thirty-six pens, 20x32 feet, each containing a house 6x8 feet. For every four pens there is a run of 80x150 feet, all enclosed with poultry cabled wire.

Electrical Engineering

DIRECTOR RIGGS

ASSISTANT PROFESSOR KYSER

Junior Year

BOTH TERMS.—Three hours per week are devoted to the study of electricity and magnetism, and the elementary design of electro-magnetic mechanism. The work of this session is largely in laying a foundation for the more strictly engineering work of the Senior year.

Text-books—Thompson's Elementary Lessons in Electricity and Magnetism, Electricity and Magnetism, Jackson.

BOTH TERMS.—*Laboratory Practice*.—Three hours per week for the session are devoted to experimentally verifying fundamental electrical laws, measuring currents, electro-mo-

tive force, resistance, quantity, induction, capacity, permeability; calibrating instruments, etc.

Reference books—Ayrton's Practical Electricity; Stewart and Gee's Practical Physics; Nichols' Physics, Vol. I.; Henderson's Practical Electricity and Magnetism, Vols. I. and II.

Senior Year

BOTH TERMS.—Five hours per week are given to the study and design of dynamo electric machinery. The second half session is devoted to the study of alternating currents, and their applications to light and power, special attention being given to polyphase systems, and apparatus.

A dynamo design, with complete set of drawings, is required of each student as part of the course.

Text and reference books—Thompson's Dynamo Electric Machinery, Alternating Currents, by Franklin & Williamson, Dynamo Electric Machinery, Vol. II., by Sheldon.

BOTH TERMS.—*Laboratory Practice.*—Three hours per week devoted to the care, management and testing of arc, incandescent and alternating current generators; direct current, synchronous and induction motors; arc lamps; transformers; calibration of station instruments, incandescent lamp photometry, etc.

Equipment

ELECTRICAL INSTRUMENT LABORATORY.—This is a separate brick building, designed especially for delicate electromagnetic work—no iron, steel or other magnetic substances having been used in its permanent construction. It contains, in addition to all necessary elementary apparatus, the following instruments: Kelvin-Deka ampere balance, Kelvin four-coil astatic galvanometer, four D'Arsonval dead-beat galvanometers, large ring tangent galvanometer, three Elliott Brothers' standard resistance sets, Elliott Brothers' standard tangent galvanometer, Queen's standard ballistic galva-

nometer, Nalder Brothers' sensitive galvanometer, Rowland-D'Arsonval ballistic galvanometers, Willyoung standard condenser, Becker's chemical balance, Cahart-Clark standard cell, thermometers, Wheatstone bridges, storage and primary cells, etc.

DYNAMO LABORATORY.—To meet the demands of larger attendance and increased equipment, a new building has been provided in which is installed the dynamo-electric machinery. This building also contains a class room and a dark room for photometric work. It is a single story brick structure, 37x80 feet, with basement for supply rooms.

The first story is divided into a class room 25x35 feet, and a dynamo laboratory room 53x35 feet. The building is heated by steam and lighted by enclosed arc and incandescent lamps.

The lecture room has elevated seats and is equipped with a complete line of illustration models, apparatus and electrical instruments. It contains an electro magnet capable of supporting the weight of two tons.

The Dynamo Laboratory contains, in addition to rheostats, speed counters, switches, and other small apparatus, the following machines and instruments:

50 H. P. high speed McEwen automatic engine.

Direct Current Generators—15 K. W. Mather, 17 K. W. Lundell, 2 1-2 K. W. Crocker-Wheeler, two, 2 K. W. Kester.

Direct Current Motors—15 and 10 H. P. Kester, three 1-6 H. P. Crocker-Wheeler.

Direct Current Instruments—Weston Laboratory Standard Voltmetre, set of Weston portables, Jewell Ammeter and Voltmetre, Weston Switchboard Ammeter and Voltmetre, Thompson Recording Watt Metre, etc., etc.

Arc Lighting Apparatus—Brush and Thompson-Houston generators, Genl. Elec. Co. constant current transformer, principal makes of open and inclosed arc lamps.

Alternating Current Apparatus—15 K. W. Genl. Elec.

Co. 2 and 3 and 6 phase revolving field generator complete with marble switchboard and full set of indicating instruments.

7 1-2 K. W. Genl. Elec. Co. single, two and three phase rotary converter; 7 K. W. 3 phase converter (built by students.)

Genl. Elec. Co. 2 and 3 phase induction motors. Three, 3,000 Watt constant potential transformers. Assortment of small transformers, motors and models.

Alternating Current Instruments—Two Weston and one Genl. Elec. watt metre, Weston Standard A. C. volt metre, 6 Thompson inclined coil ammeters and volt metres, Cardew & Electrostatic volt metres, Kelvin ampere balance, Siemens electro-dynametre, Stanley hot wire ammeter.

Miscellaneous—Two Schaeffer & Budenberg tachometers, leading types of lightning arresters, fuse testing apparatus.

The dark room contains a complete outfit for high potential, high frequency and X-ray work, and a Deshler-McAllister central station type photometer, with rotating stand for incandescent lamp testing.

COLLEGE POWER AND LIGHT PLANT.—The machinery in the dynamo laboratory is driven by the 50 horse power engine or two 20 horse power motors. Steam and electric power for these is furnished by the power plant situated in a neighboring building. This plant consists of an 85 horse power Corliss engine, driving a 40 kw. Westinghouse generator and a 30 kw. General Electric Company's multipolar generator. This station furnishes power to 20 motors, ranging from 3 to 30 horse power. These motors are used at different points on the College property for a variety of purposes, such as pumping water, driving agricultural machinery, supplying power for machine shop, wood shop, textile department, etc. Several of these are at a considerable distance from the power station, thus furnishing examples of electrical transmission of power. Two of these, 7 horse power each, were built

by students. In addition to power for driving motors, the same generators furnish electricity for lighting the barracks and other College buildings. Students have access to this plant, and are thus enabled to see the practical workings of a combined electric light and power plant, and to test its efficiency.

The aim of the course is to make practical as well as theoretical engineers.

Special Course

REQUIREMENTS.—Students desiring to take a special course in electrical engineering should remember that no one can hope to become an electrical engineer who has not the necessary foundations in mechanical engineering, to which electrical engineering is the superstructure. Two-thirds of an electrical engineer's training must be mechanical. No special classes will be formed, and students desiring to enter the Junior Class will be expected to be prepared on elementary mechanical drawing, physics and chemistry, and on mathematics, through plane trigonometry. They will be expected to take with the Junior Class, in addition to their electrical studies, physics, mechanics, mathematics, mechanical drawing and machine shop work. Without these additional branches the student will not be prepared for the more strictly engineering work of the Senior year.

To enter the Senior Class, a student must be proficient in the work of the Junior year, in which physics and calculus are completed.

In addition to the electrical subjects prescribed for the Senior year, he must take—unless he is proficient along these lines—mechanics, mechanical engineering and laboratory, machine shop, drawing and machine design.

Students who are not prepared, or are not willing to take the other subjects necessary to successful study of electrical engineering, will not be permitted to take a special course in electrical work.

Physics

ASSOCIATE PROFESSOR POATS

The study of Physics is begun in the Sophomore year by all regular students, and completed in that year by those students taking Chemistry and Agriculture, and Textile Industry. All other regular students take Physics, both theoretical and practical, in the Junior year.

The instruction is by lectures and recitations, special stress being laid upon those principles and facts which are fundamental to the several engineering professions. The lectures and recitations are illustrated by numerous experiments before the class.

In the Physical Laboratory the student is taught to perform for himself all the experiments of a general laboratory course. The properties of matter, the laws of mechanics, heat, electricity, magnetism, light and sound are investigated. Students are required to make accurate and neatly written reports of all experiments.

Sophomore Class

FIRST TERM.—Properties of matter, physical measurements, mechanics of solids and fluids.

SECOND TERM.—Heat, electricity and magnetism.

Text-book—Carhart and Chute's Physics.

Junior Class

BOTH TERMS.—Sound and light.

Text-books—Carhart & Chute's Physics; Carhart's University Physics.

LABORATORY WORK.—*First Term.*—Experimental determination of the physical properties of matter and the verification of laws of mechanics, electricity and magnetism.

Second Term.—Experiments with heat, sound and light.

Reference Books—Chute's Practical Physics, Ames' Manual of Experiments in Physics, Carhart & Patterson's Electrical Measurements, and others.

Equipment

The Physical Lecture Room and Laboratory is situated in the main College building, is 33x60 feet, and is well equipped for both the lecture and experimental work of a general course in physics.

Drawing

ASSOCIATE PROFESSOR LEE

ASSISTANT PROFESSOR KLUGH

ASSISTANT DARGAN

All members of the Freshman class are required to take freehand and mechanical drawing, except those choosing the Agricultural course, who omit mechanical drawing during the second term. Members of the Sophomore, Junior and Senior classes in Mechanical, Electrical and Civil Engineering, and of the Senior class in Textile Industry are required to take mechanical drawing.

Throughout the entire course the best methods of work in the drawing rooms of workshops and manufacturing establishments are given.

Freshman Class

FREEHAND DRAWING.—Graded exercises in sketching from plaster casts, machine parts and other objects in pencil and ink, particular attention being paid to outlines and perspective.

MECHANICAL DRAWING.—Exercises in the use of drawing instruments, geometrical problems, lettering, conventional section and shade lines, working drawings of simple parts of machines from sketches and models.

Sophomore Class

Working drawings of machines or parts of machines from sketches and specifications. Elementary principles of machine design; construction of screw threads, proportioning of bolts and nuts; Isometric drawing, intersection and development of surfaces, shades and shadows, orthographic projection and perspective.

Junior Class

MECHANICAL DRAWING.—Working drawings of machines from sketches and specifications. Elementary principles of design continued—riveting, couplings, belt gearing, cams, gear teeth, etc., tinting, railroad and map drawing, plans and details of bridges and buildings. Work is assigned with reference to the course of study a student is pursuing.

Senior Class

MECHANICAL DRAWING.—Toothed gearing and details of steam engine, electrical and textile machinery, map and bridge drawing. Design drawing required in graduation thesis.

Reference Books—"Mechanical Drawing and Elementary Machine Design," by J. S. & D. Reid; "Machine Drawing and Design," by Low and Bevis; "Machine Design," by Unwin; "Lettering," by C. W. Reinhardt; "Plain Lettering," by Henry S. Jacoby; and "Lettering," by C. E. Sherman.

Equipment

The drawing rooms occupy the entire third floor of the Mechanical Engineering building. The third and fourth floors of the tower are also used as a dark room and blue-print room respectively. A good selection of drawings and models in these rooms are of great benefit to the student in his work. These rooms are equipped to accom-

moderate 35 students each, with cases, boards and T-squares for over 200. Students in the Freshman class are allowed the use of the necessary instruments and apparatus free of charge. Members of the Sophomore, Junior and Senior classes are required to furnish their own drawing instruments. All instruments used by students must be approved by the instructor in charge, an inferior grade of instruments will not be accepted. Students are advised to buy their instruments at the Cadet Exchange, where samples can be seen and wholesale prices obtained.

Mechanical Engineering

ASSOCIATE PROFESSOR EARLE

In this course the student is taught the application of his scientific, mathematical and technical knowledge to the design and construction of engineering structures, and of machinery and manufacturing plants in general.

Junior Class

FIRST TERM.—*Mechanism*.—Spur, bevel, and screw gearing, belt gearing, lobed and elliptic wheels, epicyclic trains, escapements, ratchet motions, link motions, quick return motions, cam motions.

Text-book—Stahl and Wood's *Mechanism*.

SECOND TERM.—*Elementary Mechanics*.—Motion, force, velocity, work, energy, power, stress, strain, elasticity, resilience, moments of force, centre of gravity, moments of inertia, momentum, hydrostatics.

Text-book—Wood's *Elementary Mechanics*.

Senior Class

BOTH TERMS.—*Mechanics and Mechanical Engineering*.—Two hours per week during the first term are given to the study of pure Mechanics, strength of engineering materials,



MECHANICAL HALL.

and hydraulics. Three hours per week first term and five hours per week second term are devoted to the study of the design and construction of steam boilers, heaters, pumps and injectors; theory and design of simple, compound and triple expansion steam engines, gas and gasoline engines, hot air engines, air compressors and motors, ice and refrigerating machinery, heating and ventilating systems, transmission of power; engineering specifications and the law of contracts. Theory of the strength of engineering materials. Graphical solution of problems. Hydraulics.

Text-books—Kerr's Power and Power Transmission; Hutton's Mechanical Engineering of Power Plants; Church's Mechanics of Engineering; Ewing's "Steam Engines and other Heat Engines."

BOTH TERMS.—*Mechanical Engineering—Laboratory Practice.*—Study, use and calibration of water-meters, weirs, steam gauges, indicators, dynamometers, calorimeters; efficiency tests of screw-jacks and hoists; tests of fuels and lubricants; tests of building materials, as iron, wood, brick, cement, etc.; erecting, lining up and setting the valves of plain slide-valve and automatic cut-off steam engines; indicator practice; horse-power and efficiency of steam, gasoline and hot-air engines and air-compressors and motors; efficiency trials of steam boilers; duty trial of steam pump and of College pumping engine.

Reference books—Carpenter's "Experimental Engineering," Smart's "Engineering Laboratory Practice," Thurston's "Steam Engine."

Equipment

This laboratory occupies a room 41x45 feet, and contains the following equipment: *For steam engineering*: 15 horse-power horizontal, locomotive type boiler; 6 horse-power vertical boiler; Erie 6 horse-power plain slide-valve steam engine; 6 horse-power vertical steam engine built in the shops; Payne

15 horse-power high speed automatic engine; Corliss cross-compound condensing steam engine arranged so that either side may be run condensing or non-condensing and each side independent of the other; Wheeler surface condenser with combined air and circulating pumps; set of steam-gauge testing apparatus; Carpenter's separating steam calorimeter; two throttling steam calorimeters; five steam engine indicators of various makes; two standard injectors. *For hydraulic engineering:* two hydraulic rams; Pelton water motor; power triplex pump; three duplex pumps of different makes; three weirs; recording altitude gauge; 6 pressure and altitude gauges. *For compressed air:* Clayton air compressor with jacketed cylinders; improved air motor. *For fuel and lubricants:* Carpenter's fuel calorimeter with scales, balances, and oxygen generating devices; standard viscometer. *For testing building materials:* 100,000-pound Olsen automatic vertical testing machine driven by 5-horse power Westinghouse electric motor, and fitted for tension, compression, and transverse testing; Fairbank's cement testing machine; 3,000-pound transverse testing machine. The laboratory also contains a 5-horse power Otto gasoline engine, an Ericsson hot-air engine, a 6-horse power transmission dynamometer, graduated to read horse power direct and built by students, and an assortment of standard thermometers, weights and measures. The apparatus is so arranged that any of it may be used for separate or combined tests, or for any original investigations. Besides the equipment in this room, the electric light and power plant, the heating plant of the College and barracks, the isolated plants at the dairy, horticultural grounds and pumping station are available for instructional purposes.

Forge and Foundry

ASSISTANT PROFESSOR JOHNSON

ASSISTANT GANTT

Freshman Class

BOTH TERMS.—*Forge Work*.—The student is first familiarized with the names and uses of the tools necessary in this work, and in the manipulation of the Buffalo down draft forge. Graduated exercises are then taken up, beginning with those embracing the fundamental operations of forging: such as drawing out, upsetting, bending, punching, twisting, welding, etc., and leading to the forging of articles of a practical commercial nature. The latter part of the second term is devoted entirely to work in tool steel, involving all the processes of hardening, tempering, annealing, etc., and each student is required to complete a set of cold and cape chisels, and a complete set of machinist's lathe tools, before he is allowed to pass up on this work.

Sophomore Class

BOTH TERMS.—*Foundry Work*.—Students are taught the names and uses of tools; tempering of molding sand; molding and patching of molds. Patterns of various shapes and sizes are used to illustrate the different principles of molding, venting and gating; the use of risers, pressure gates, skim gates, gaggers, chaplets, facing sands; feeding of castings; core-making; grading and mixing of iron; charging and managing the cupola. Several weeks are devoted to work in the brass foundry. The practical instruction is supplemented by a course of lectures, covering the last six weeks of the course, and touching upon all phases of foundry work, including the metallurgy of foundry metals.

Equipment

FORGE SHOP.—This is a room 37x60 feet, situated in a wing of the Mechanical building. It is equipped with 18 Buffalo down draft forges and steel-faced anvils, with sets of hammers, tongs, swages, fullers, flatters, etc. Continuous blast is furnished by a Buffalo blower driven by a 15 H. P. electric motor, the down draft being produced by a 60-inch Buffalo exhaust fan. The shop is also supplied with vises, swage blocks, emery wheel, bending cone, drill-press, bolt shear, &c.

FOUNDRY.—This building occupies a space 43x76 feet and is free from posts or other obstructions. It is equipped with a 26-inch Victor Collian cupola, a Millett's core oven, a two-ton post crane, 8 improved moulder's benches, an 18-inch brass furnace, with its usual complement of crucibles, tongs, etc., full set of moulder's tools for the accommodation of 20 students, besides the usual accessories to the foundry, such as ladles, flasks, etc.

Machine Shop

ASSISTANT PROFESSOR WRIGHT

Junior Class

BOTH TERMS.—Instruction begins at the bench with exercises in chipping, filing, scraping and polishing. Castings and drawings are given the student, and he is required to chip, file, scrape and polish each casting into the exact form and size represented by the corresponding drawing. From bench work the student is advanced to machine work, where he is taught turning, boring, polishing, drilling, threading, planing, milling, grinding, etc., in iron, brass and steel. In all cases the exercises are required to be worked to drawings. The graded course of exercises is designed to teach the fun-

damental principles and practices of machine metal-work from the simplest to the most difficult operations.

Only a few set exercises are given to teach important fundamental processes. It is the policy of the shop to keep several large machines in process of construction, requiring the students to do the work. Experience has taught that students take greater interest in making parts of a machine that is for actual use than in mere routine exercise work.

Senior Class

BOTH TERMS.—The Senior year is devoted to more advanced work in the construction of engines, dynamos, motors and other machines. The student is encouraged to work from his own designs as far as possible, but is guided and directed by the instructor in charge.

Equipment

The machine shop is located in the southwest wing of the Mechanical building, which wing is 45x100 feet, well lighted, heated and ventilated.

It contains eighteen benches, with vises, 110 kits of tools and the following machine tools: 1 18-in.x12-foot engine lathe; 1 18-in.x8-foot engine lathe; 3 14-in.x6-foot engine lathes; 4 14-in.x6-foot Lodge & Shipley lathes; 2 14-in.x6-foot F. E. Reed compound rest engine lathes; 2 14-in.x6-foot Hendey compound rest engine lathes; 1 10-in.x4-foot F. E. Reed pattern maker's lathe; 1 15-in.x8-foot speed lathe; 1 18-in. drill press; 1 28-in. back geared drill press; 1 22-in.x6-foot Powell planer; 1 Cincinnati cutter and tool grinder; 1 15-in. Gould and Eberhardt crank shaper; 1 dry emery grinder; 1 12-in. power hack saw; 1 36-in. grind-stone; 1 22-in. Leland and Faulconer wet emery tool grinder; 1 American twist drill grinder; 1 10-in. slotting machine, built by New Haven Mfg. Co.; 1 fan; 1 forge. The tool room in connec-

tion with the shop contains all tools, etc., necessary for use with the machines.

The 7 H. P. motor which drives the machinery was built by students.

Wood-work

ASSISTANT PROFESSOR HOOK

ASSISTANT GANTT

The course in wood-work does not aim to make the student a skilled workman, but rather to teach the proper use of tools and impress the importance of working to exact dimensions. At the same time, it gives a certain amount of manual dexterity, useful in every vocation.

The course covers two years, beginning with the most elementary principles and advancing gradually by a series of graded exercises to the more complicated constructions where special methods and tools are required. All work is done from working drawings, and commercial shop methods are constantly employed.

Freshman Class

BOTH TERMS.—Use and care of tools; graded exercises in carpentry, joining, wood-turning, and hand-carving; construction of articles from working drawings; use of turning lathe and other simple machinery; construction of boxes, desks, etc., involving dove-tailing, gluing, polishing; turning of cups, vases, Indian clubs, etc.

Sophomore Class

BOTH TERMS.—Use of wood-working machinery, as plainer, jointer, moulder, mortice and tenoning machine, carving and paneling machine, shaper, circular and jig-saws. Pattern work, with graded exercises, illustrating the principles of draft and shrinkage, and teaching the construction

of core prints, core boxes, etc. Patterns for machines under construction. Cabinet work, and furniture construction, as chairs, desks, book-cases, hall stands, etc.

Equipment

The wood shop occupies the two-story wing on the east side of the Mechanical Engineering building, 45x100 feet. The lower floor contains the Freshman Class room, equipped with fifteen work benches and sets of tools, six turning lathes, with tools for each, and other tools for hand work. On this floor is also the planing mill machinery, consisting of a double roll planer, power rip and cut-off saws, band saw, scroll saw, 16-inch jointer, moulding machine, mortising machine, tenoning machine, emery grinder, lathe with 12-foot bed, etc.

The upper floor is devoted to the work for the Sophomore Class, and is fitted up with fifteen work-benches, and ninety sets of tools—one set for each student; six 10-in. turning lathes, large pattern lathe, combination saw and boring machine, double head shaper, panelling machine, carving machine, jig-saw, universal trimming machine, special door and sash clamps, steam glue pots, miter cutters, etc. The power is supplied by electric motors conveniently located in the various rooms. A large lumber yard and dry-kiln provide seasoned lumber at all times.

Chemistry

DIRECTOR HARDIN

ASSOCIATE PROFESSOR BRACKETT

ASSISTANT PROFESSOR SHIVER

INSTRUCTOR HENRY

Sophomore Class

BOTH TERMS.—*General Chemistry*.—Inorganic chemistry and the leading facts and principles of organic chemistry.

Text-book, Roscoe's Elementary Chemistry. *Laboratory*—Introductory work and qualitative analysis. Text-book, Jones' Junior Course in Practical Chemistry.

Junior Class

BOTH TERMS.—*Industrial and Analytical Chemistry*.—The applications of chemistry in the more important arts and manufactures. Among the subjects studied are: Sulphuric acid; soda; chlorine; potash salts; fertilizers; lime, mortar and cements; glass; porcelain; illuminating gas; coal tar; mineral oils; vegetable and animal oils; soap; fermentation industries, etc. Text-book, Thorp's Outlines of Industrial Chemistry. *Laboratory*—Qualitative and quantitative analyses and assaying. Books used: Jones' Junior Course in Practical Chemistry, Fresenius' Qualitative and Quantitative Analysis.

Senior Class

BOTH TERMS.—*Agricultural and Analytical Chemistry*.—The composition of plants, the sources of plant-food, the composition of soils, the improvement of soils by chemical means, the composition and manufacture of fertilizers, the composition of feeding-stuffs and of dairy products. Text-book, Johnston's Elements of Agricultural Chemistry, edited by Cameron and Aikman. *Laboratory*—Quantitative analysis of fertilizers, soils, ashes of plants, water, cattle-foods and dairy products. Books used: Bulletins of U. S. Department of Agriculture, containing methods of analysis adopted by the Association of Official Agricultural Chemists.

Equipment

The original Chemical Laboratory is a two-story brick building, 50x80 feet, covered with slate and finished inside with Southern pine. Overlapping this at one corner, and connected with it by a glass-enclosed passage, is a new and somewhat similar building, 53x86 feet, of modern style and



CHEMICAL LABORATORY

handsome design. This double building, which is well ventilated, heated by steam, and lighted by electricity, constitutes a commodious structure adequate to all the needs of the Department.

On the first floor of the old building, which is used for academic work, there are five rooms. Two of these, connecting with each other, are employed as a laboratory for the Agricultural Seniors. Of the other rooms on this floor, one is a laboratory for post-graduate students and one a balance room, while the third is reserved for such use as the ever increasing demands upon the Department may require.

On the second floor of this building, there are two large laboratories, one for the Juniors in Analytical Chemistry, the other for the Sophomores in General Chemistry. A third and smaller room is used as a balance room.

The Junior laboratory will accommodate seventy-two students, thirty-six at a time; the Sophomore laboratory, one hundred and twenty students, sixty at a time. The laboratories are all provided with hoods for carrying off noxious gases, convenient working tables, water, gas, electric lights, and all necessary appliances for experimental work.

The basement of the building is used for assaying, for the preparation of distilled water and for storage. The air pump and the mixer of the gas machine for supplying the laboratories with gas are placed in this basement and connected with the generator, which is in a brick vault eighty-five feet from the building.

On the first floor of the new building there are nine rooms, all of which are appropriated to the chemical work of the State and of the Experiment Station. On one side of the wide hall which extends the entire length of the building are the rooms for the analysis of fertilizers. Three of these rooms are used respectively for the determination of phosphoric acid, ammonia and potash; the fourth as a balance room; the fifth and last as a sample room. On the other side of the

hall there are four rooms. The largest of these is used for the Agricultural Analysis of the Station. Adjoining this is a balance room, in which provision is made also for the optical and electrolytical apparatus. Of the remaining rooms, one is used for water analysis, the other as an office.

On the second floor of this building there are seven rooms; a lecture room, and six smaller rooms which are used for recitations, cabinets, apparatus, chemicals, library and Professor's laboratory.

The lecture room will seat one hundred and seventy students, the seats being arranged in tiers.

The hoods in this building are all connected by earthenware pipes with a tightly-built room, just under the roof, over which there is a large ventilator. An electric fan will be placed in this room, should the draught be found insufficient without it.

The rooms in the basement are used for assaying ores, for the preparation of agricultural products for analysis, and for storage. An electric motor located in one of three rooms supplies the power which drives the machinery for grinding and pulping samples of vegetable substances.

Department of Textile Industry

DIRECTOR BEATY

ASSOCIATE PROFESSOR FRISSELL

ASSISTANT PROFESSOR JAMES

INSTRUCTOR PARKER

Textile Course

This course comprises a system of liberal education and culture as a part of the textile training. The object has been to arrange a course in which students will not only be given special knowledge of textile subjects, but will at the same

time and along with this special training receive the advantages of a good general education.

The first two years of the course are devoted to the study of general principles underlying the sciences involved in manufacturing. The third and fourth years of this course consist, in part, of a study of materials, processes, machinery and apparatus used in modern manufacturing, from those used in the production of plain coarse fabrics, to those used in the production of fine and elaborate, fancy colored fabrics.

Special Textile Course

A special two year course has been arranged in this department to meet the demands of mature young men, who already have a good general education. The course covering a period of two years only, does not provide time for a general mechanical training, but instruction is devoted almost exclusively to mill processes, dyeing, bleaching, mercerizing and printing of textile fabrics. The method of instruction, in both courses, is practically the same, and individual instruction is given in every instance where circumstances will permit.

The examination of applicants will be at the College at the beginning of each fall term. For admission to this course it is required that students be proficient in Mathematics, English, History, Physics, General Inorganic Chemistry and Qualitative Analysis as completed in the Sophomore year at this College.

Details of Instruction

In carding and spinning, after the subject of raw material has been completed, machinery and processes used in the production of cotton yarns will be taken up systematically, going into a detailed examination and explanation of the separate machines and the mechanisms peculiar to them. Calculations for making changes of gears, speeds, production, etc., and practical operation of each machine will be required.

In designing, instruction begins with explanations of the principles of representing weaves on design paper, after which the designing of plain simple weaves, laying out of harness drafts, pegging plans, etc., are taken up, advancing into the designing of more complicated weaves usually made on harness. After the completion of harness weaves the time will be devoted to designing of Jacquard weaves and tying-up of Jacquards. The aim of the instruction in designing will be to develop originality in the student.

The practical work in weaving is laid out to parallel the instruction in designing. The first part of the instruction in this work will be on hand looms. After the completion of that amount of work required on hand looms the student is advanced to plain and fancy power looms, where in addition to the practical operation of weaving, the loom will be analyzed and explained in detail, together with timing and setting all working parts. The latter part of this work will be on Jacquards.

Cloth analysis consists in dissecting samples of various kinds of cloth to ascertain the weave, texture, weight per yard and the counts of yarn used in its construction. The students are required to reproduce some of these patterns on the looms in the school.

The work in textile chemistry and dyeing covers inorganic quantitative analysis; the general principles of organic chemistry, with special reference to the coloring matters; the preparation of mordants and dyes, and the application of the latter to the several textile fibres.

Care is taken to develop accuracy in observation, neatness and clearness in written reports; and to this end each student is required to submit a comprehensive report—including the necessary notes and references from standard works on the subject—of every experiment performed by him. By this method each student is able to verify for himself in the labor-

atory, the truth of the principle stated to him in the class room.

Each student will be required to submit an organization and a list of the machinery equipment, for several different sizes of mills, making different classes of products.

In all the divisions of this department, the lecture work, so far as is necessary, will be illustrated with drawings and lantern slides.

Division of Carding and Spinning

RAW MATERIAL.—That the manipulation of cotton fibres may be carried out successfully, under various conditions, it is essential that the characteristics peculiar to the cotton fibre should be understood. Therefore, the introductory work of the students of this department is to examine the physical properties of cotton fibres, to ascertain their lengths of staple, spinning qualities, color, harshness and softness, and to determine their suitability for making various kinds of yarn, filling, warp, ply yarns, etc. This study of fibres will not be limited to American cottons, but will include the more important commercial cottons of the world. The effects of temperature and humidity on fibres will be fully discussed. Also the handling of cotton, prior to manufacturing processes, together with the injury to cotton fibres therefrom.

OPENING AND MIXING.—Beneficial effects of opening and airing cotton; length of time to air for best results; effects on resultant yarn if not properly opened; necessity of mixing; when to mix cottons and methods of carrying out same; effects of improper mixing; effects of a judicious mixing on the after processes of manufacture; reasons for blending; effects of blending cottons on the resultant yarn, for strength, appearance, cost, etc.; effects on finished products if cottons are not properly mixed or blended.

PICKER ROOM.—Proper situation of picker room; arrangement of machinery in same; automatic feeder; purpose for

which used ; construction, adjustment of parts, etc. ; action on cotton ; manner of connecting them to breaker lappers with and without dust trunks ; advantages of dust trunk ; facilitating good results by proper care ; breaker lapper, use, explanation of parts, beaters used, adjustment of working parts and experimenting with different speeds of beater ; intermediate and finisher lappers, necessity of using same, construction, speeds, care of beaters, kinds of beaters, speeds of beaters for different lengths of staple ; evener motion and its control of feed rolls ; adjustment of grids to regulate amount of waste, disposition of waste ; regulation of air current ; effects of air current on proper working of the lapper ; lap formation ; calculation on above machines for drafts, length of lap, etc.

CARDING.—Purpose of carding ; principle upon which cards are built ; comparison of types of cards ; explanation of purpose and construction of feed plate, lick-in, cylinder, flats, screens, doffer, coiler head, etc. ; different settings of card to produce best results on different lengths and qualities of fibre ; regulation of waste ; amount of draft ; grinding ; effects of improper grinding on card clothing and fibre ; calculations for changing gears and speeds of various working parts.

COMBING.—Silver lap machine, its construction, use, etc. ; care and operation ; leather covered rolls, metallic rolls ; ribbon lap machine, its construction, use, etc. ; advantages of using same ; care and operation ; lap formation ; combing machine, its use, care and operation ; detailed explanation of working parts, cylinder, half laps, segments, detaching rolls, etc. ; with rules for adjusting and timing same ; regulation of waste made ; necessity of the process ; relation of the process to fine smooth yarns ; practical experience in adjusting above machines ; calculation for change gears, etc.

RAILWAY HEADS AND DRAWING FRAMES.—Purpose, use, construction, advantages and disadvantages of railway heads ; explanation of stop motions, evener ; principle of drawing

slivers; purpose of drawing frame; comparing work of leather covered and metallic rolls; adjustment of rolls; distribution of draft between the rolls; speeds, stop motions; all calculations on above machines, drafts, production, etc.

FLY FRAMES.—Slubber, intermediate, fine roving and jack frames; construction, care and operation of the modern fly frame; bobbin and flyer lead machines; advantages of the bobbin lead; detailed explanation of working parts, differential motion, horse head, builder, full bobbin stop motion, etc.; adjustment of drawing rolls; calculations for draft, twist, lay, tension and other gears.

SPINNING FRAMES.—Construction of the modern ring spinning frames; purpose of ring spinning; discussion of its principal parts; rings and ring holders; various types of spindles in use; speed of spindles; weights, sizes and speeds of travellers; warp, filling and combination builder motions; speeds and settings of rolls for different lengths of staple; effects of twist on the strength, color and elasticity of yarns; calculations for draft, twist, production and various constants.

SPINNING MULES.—Construction and operation of the self-acting spinning mule; special features; description of the head stock, cam shaft, copping rail, npsing motion, easing motion, jacking motion, twisting at the head, etc.; different movements in the mule and timing of the same; formation of a cop; characteristics and uses of mule spun yarn; calculations for draft, twist, builder gear, etc.

YARN MANIPULATION.—In this branch of work is included twisting; reeling; bundling; spooling; beaming. The slasher, construction and use; necessity for sizing; creels, cylinders, size boxes, etc.; mixing of size; different sizing ingredients for special purposes; method of preparing warps for the slasher; various calculations regarding each of the above processes.

Text and Reference Books—Nasmith's "Student Cotton

Spinner;" Tompkins' "Cotton Mill Processes and Calculations;" Taggart's "Cotton Spinning;" Monie's "Sizing and Sizing Compounds."

Division of Weaving

DESIGNING.—Purpose of designing; explanation of "warp" and "filling;" representing weaves on design paper; foundation weaves; plain or cotton weave; weaves derived from plain weaves, such as rib and basket weaves; twill weaves and methods of construction; derivative weave from twills, such as, broken, steep, skip, reclining and curved twills; corkscrew twills, entwining twills; satin weave and the purpose of same; weaves derived from satins; such as double satins and granites; shading of satins; figured effects produced by using warp and filling satins; color effects produced by using two or more colors in the above fabrics; methods of constructing granite weaves; points to be considered in combination weaves; special weaves; honey combs, gauze and imitation gauze, bedford cord, plain and fancy piques, matelasses, etc.; two systems of warp and one system of filling, or two systems of filling and one system of warp for the purpose of figuring; explanation of double cloth, purposes, and class of fabrics in which generally used; representing double cloth weave on design paper; use of different proportions of "back" and "face" for special effects; method of stitching double cloth so that the stitching will produce a figuring effect; stitching so that it will not show either on "face" or "back" of cloth; leno weaves and method of representing on design paper; methods of making drawing-in drafts, plain and fancy drafts, point, skip, mixed or cross draws; chain drafts; rules for finding the number of heddles required for each harness; methods used in reducing weaves to the lowest number of harness.

JACQUARD DESIGNING.—Explanation of the various Jacquard machines; methods of shedding, such as, the rise and

e d e d

drop, single lift, double lift machine ; single and double cylinder machine ; open and closed shed machine ; drawing of tie-ups, straight tie-up both in French and English system, point tie-up, combination tie-up for special goods as table damask, Marseilles quilts, etc. ; practical operation of tying-up a jacquard, cutting leashes, threading of comber board, tying on and leveling up mail eyes ; figuring comber board for a given texture of goods ; casting out hooks to reduce texture of goods without retying the harness, cutting and lacing cards for a given design ; selection of design paper for different fabrics, with regard to picks and ends per inch used ; methods used in laying out the figure for a jacquard design ; enlarging the sketch for design paper.

CLOTH ANALYSIS.—Methods of arranging cloth sample for analysis ; figuring the counts of cotton, woolen, worsted, and silk yarns ; calculations for converting one system of yarns into that of another ; finding the weight of cloth per yard and the counts of yarn used in its construction from the analysis ; figuring width of warp in reed and number of reed to use to produce a given width and texture when woven ; calculations to determine the cost of producing a fabric having given values of material, labor, counts, picks and ends per inch, weight per yard, etc.

This work takes up all representative classes of weaves that can be woven on harness, and gives the student a thorough knowledge of figuring yarns, weight of cloth, ends and picks per inch, etc.

HAND LOOM WEAVING.—The first practical work in weaving is on the hand loom. These hand looms have 4x4 box motion and 30 harness dobbies. After the design and necessary calculations have been made the student proceeds with dressing, drawing-in, reeding, tying the warp in loom, building harness chain and starting up loom ; producing different weave effects from the same drawing-in draft by changing the harness chain ; using box motions for color effects ; com-

binning two or more systems of filling with one system of warp, two or more systems of warp with one system of filling, two or more systems of warp with two or more systems of filling to produce figured fabrics of a special character; explanation of the different methods used in raising and lowering the harness.

POWER LOOM WEAVING.—Power loom weaving will be taken up after the student has finished the required amount of hand loom work and will include a study of the plain or cam loom; cam motions used for raising and lowering the harness, such as the under cam, side cam, etc.; setting cams; sketching cams to produce a given motion; arrangement of strapping for two, three, four and five harness; timing cams to suit the number of harness used; speed of different width looms on the same class of fabrics; selection of temples and measurements for same; Draper loom; warp stop motion, filling change mechanism, etc.; the dobby analysed and explained; methods of shedding; head motions; harness chains for single and double index dobbies; chains for head motions; explanation of box motions, four by one, four by four box, etc.; building box motion chains; explanation of multipliers used on box motions and harness motions; let-off motions, Morton, Bartlett, Shepard, and friction let-offs; open and closed shed machines explained; single and double index dobbies, etc.

Reference Books—Ivey's "Loom Fixing;" Fox's "Mechanism of Weaving;" Posselt's "Technology of Textile Designs;" Holmes'. "Cotton Cloth Designing."

Division of Textile Chemistry and Dyeing

JUNIOR YEAR.—To the qualitative and quantitative analysis of the general course is added a course of lectures in inorganic chemistry especially relating to the materials used in the various textile processes of mordanting, fixing, scouring, bleaching, etc. Also lectures on organic chemistry, taking

up as much of the aliphatic series as is necessary for an understanding of the chemical reactions involved in the application of these compounds to textile operations, and to prepare the student for the study of the aromatic compounds. Toward the end of the year the discussion of the simpler aromatic compounds is begun as an introduction to the special work on synthetic dyestuffs in the Senior year.

The laboratory work will include the preparation of typical compounds of each class of derivatives taken up in the lectures.

SENIOR YEAR.—*First Term.*—Organic chemistry taking up the discussion of the aromatic series with special reference to the coloring matters. A course of lectures is given which covers that portion of the aromatic series which has reference to the study of the principal synthetic dyestuffs. The laboratory work consists of the preparation of certain typical dyestuffs and the study of their reactions. A complete written report of each experiment is required of the student, and written reviews are given each month on the subjects covered in the lectures and laboratory work. The purpose of the course is to give the student an understanding of the chemistry of the operations by which coal tar products are separated, purified and converted into dyestuffs.

SECOND TERM.—*Dyeing, Bleaching, etc., of Textile Fibres.*—A course of lectures is given on the application of the different classes of dyestuffs to the various fibres, together with the chemical and physical properties of the latter; bleaching and mercerizing of cotton yarns and cloth; scouring and bleaching of wool; the manufacture of artificial silk; calico printing, etc. In the laboratory the dyeing of cotton and wool is carried on in an experimental way, a study being made of typical dyestuffs of each of the principal classes. In the dye-house the dyeing of larger quantities of cotton and wool is carried on, as well as the bleaching and mercerizing

of cotton, scouring and bleaching of wool, and the printing of calico.

The student is required to make a written report of each experiment performed, accompanied by samples of the dyed material, which have been subjected to the action of various agencies, such as light, acids, alkalies, etc.

The purpose of this training, taken in connection with the work preceding it, is to serve as an introduction to the work of the practical dyer, and to prepare the student for the position of chemist in textile establishments. The constant aim of the instruction is to point out the chemical reactions at the foundation of the above textile operations, so that the student going into practical work in the mills, will have at his command scientific knowledge sufficient to enable him to study intelligently into such problems as may come before him in his line of work.

Reference Books—Richter's "Organic Chemistry;" Bernthsen's "Organic Chemistry;" Allen's "Commercial Organic Analysis;" Heermann's "Dyer's Materials;" Schultz & Julius' "Organic Coloring Matters;" Georgievic's "Chemical Technology of Textile Fibres;" Kenecht, Rawson & Lowenthal's "Manual of Dyeing;" Beech's "Dyeing of Cotton Fabrics;" Hummel's "Dyeing of Textile Fabrics;" Frap's "Principles of Dyeing."

Building and Equipment

The building is a brick structure of modern cotton mill design, 168x75. It is of the slow burning type, built according to fire insurance regulations, after plans of an experienced mill engineer. The building although designed for educational and experimental purposes, containing offices, lecture rooms and laboratories, retains the more prominent features of a typical Southern cotton mill. This affords the student an opportunity of observing many points of valuable information in connection with mill construction, along with the manipu-

lation of cotton fibres and the study of cotton mill processes and operations.

The first floor is occupied by the carding and spinning machinery, a lecture room, the main office, an exhibit room and the departmental library. The machinery on this floor is driven by two electric motors, one a 22 K. W. 220 volt direct current Westinghouse motor, driving the carding machinery, and a 15 K. W. 220 volt direct current General Electric Co. motor, driving the spinning machinery.

The second floor is occupied by the experimental dyeing laboratory, hand looms, power looms, and a lecture room and two offices. The power machinery on this floor is driven by a 15 K. W. 220 volt direct current General Electric Co. motor.

The basement, which is situated under the right hand half of building, is occupied by the dye-house, and is nicely equipped for that purpose. The equipment is as follows: A system of "Vortex" humidifiers from the American Moistening Co.; steam heating system and automatic fire sprinklers from The D. A. Tompkins Company; equipment of shafting, pulleys and hangers, from Jones and Laughlin, Ltd., and from T. B. Wood's Sons; one 22 K. W. electric motor from the Westinghouse Electric Co.; two 15 K. W. electric motors from General Electric Co.

Carding Division

Pickers—One Atherton automatic feeder; one Atherton combination breaker and finisher lapper, with evener motion.

Cards—One Saco & Pettee 40-in. revolving top flat card; one Mason 40-in. revolving top flat card; two traverse wheel grinders; two drum traverse grinders; stripping and burnishing rolls; two complete sets of carder's tools.

Combing—One Mason silver lap machine; one Mason ribbon lap machine; one Mason six-head combing machine.

Railway Heads—One Saco & Pattee railway head, with evener motion, stop motions, and metallic rolls; one Mason

railway head, with evener motion, stop motions, and metallic rolls.

Drawing—One Saco & Pettee drawing frame, 4 deliveries, stop motions, and metallic rolls; one Mason drawing frame, 4 deliveries, stop motions, and metallic rolls.

Fly Frames—One Saco & Pettee 12-in.x6-in. 40 spindle slubber, with latest differential motion; one Saco & Pettee 8-in.x4-in. 60 spindle intermediate roving frame, with latest differential motion; one Saco & Pettee 7-in.x3 1-2-in. 80 spindle fine roving frame, with latest differential motion; one Woonsocket 6-in.x2 1-2-in., 96 spindle jack roving frame, with Daly's improved differential motion.

Spinning Division

Ring Spinning—One Saco & Pettee combination warp and filling ring spinning frame, 128 spindles; one Mason combination warp and filling ring spinning frame, 112 spindles; two Fales & Jenks' combination warp and filling ring spinning frames, 80 spindles each, designed for spinning fine counts.

Mule Spinning—One Mason self-acting spinning mule, 120 spindles, 1 3-4-in. gauge, with all latest improvements.

Spooling—One Draper spooler, 40 spindles; one Saco & Pettee spooler, 72 spindles; one Barber & Colman knotter.

Twisting—One Draper combination wet and dry twister, 48 spindles; one Fales & Jenks wet twister, combination filling and taper top wind, 70 spindles.

Winding—One W. W. Altemus & Son bobbin winder; one Atwood-Morrison Co. bobbin winder; one Geo. W. Payne & Co. skein winder; one Universal cone and tube winder.

Reeling—One D. A. Tompkins Co. adjustable reel, 50 spindles.

Warping—One Draper warper with creel.

Beaming—One Entwistle beaming machine.

The divisions of carding and spinning are well equipped with all necessary supplies, such as, doff boxes, roving cans, bobbins, spools, cops, cones, tubes and change gears for all machines.

Weaving Division

Hand Looms—Seventeen hand looms, with 4x4 box motion, and 30 harness shedding engines, arranged for four beam work.

Power Looms—One 40-in. Northrop cam loom, with warp stop motion and automatic filling magazine; one 28-in. Northrop cam loom, with warp stop motion and automatic filling magazine also fitted with Stafford 20 harness dobby; one Mason 36-in. gingham loom, with 4x1 box motion; one Mason 40-in. loom, with 1x1 box motion, with Stafford 20 harness dobby also arranged for center selvage motion; one Mason 44-in. fancy cotton loom, with 24 harness dobby; one Stafford 30-in. fancy cotton loom, with 20 harness dobby and leno attachment; one Stafford 30-in. dress goods loom, with Stafford 400 hook, single lift, swing cylinder, jacquard; one Knowles 40-in. fancy "Gem" loom, with 30 harness dobby, 4x4 box motion; one Crompton & Knowles 36-in. fancy cotton towel loom; one Crompton 65-in. loom, 4x1 drop box motion, fitted with 624 hook double lift, swing cylinder, jacquard, tied for weaving table damask; one Whittin 40-in. cam loom, arranged to weave up to 6 harness; one Whittin 40-in. fancy cotton loom, fitted with 20 harness dobby; one Kilburn & Lincoln 40-in. loom, 4x1 box motion, arranged for dobby; one Kilburn & Lincoln 40-in. loom, 2x2 drop box motion, arranged for dobby.

Jacquard Card Cutting—One Jno. Royle French index foot power card cutter.

This division is also equipped with one floor stand, fitted with 8 harness dobby and leno attachment, built specially for illustrating leno weaves; one jacquard tying-up frame; warp-

ing pegs; beaming frames; drawing-in frames; extra heddles and heddle frames; reeds; change gears, etc.

Division of Textile Chemistry and Dyeing

The work in textile chemistry and dyeing is carried on in an experimental laboratory and a practical dye-house. These are equipped with the necessary apparatus and chemicals for instruction in organic chemistry, scouring, bleaching, dyeing, mercerizing, printing, etc.

The experimental laboratory is fitted with appropriate work-tables furnishing accommodations for sixty-four students working by detachments. Each table is supplied with the necessary arrangements for gas and water, and drawers and lockers in which may be stored apparatus and unfinished experiments.

Dye-house—Eight standard size dye vats, three fitted with copper heating coils; one Schaum & Uhlinger self-balancing hydro-extractor; one steaming and ageing box; one mercerizing apparatus for yarn; one calico printing machine; one 20 gal. copper kettle; one set copper measures. Other machinery will be selected and installed, in this division, during the coming year. This division is well equipped with reels, yarn testers, analytical balances, etc., and necessary instruments for experimental purposes.

Departmental Library

For the use of students and instructors, a reading room in the textile building has been fitted up and is furnished with some of the more important books of reference relating to the textile industry, and also with the leading periodicals relating to the subject. New books are being added constantly. The room will open every week day throughout the session.

Donations

The following donations are acknowledged with thanks :

The A. T. Atherton Machine Co., Pawtucket, R. I.—One automatic feeder ; one combination breaker and finisher lap-per ; one lot of lap rods.

Saco & Pettee Machine Co., Newton Upper Falls, Mass.—One 40-in. revolving top flat card ; one Entwistle traverse grinder ; one Entwistle drum grinder ; one burnisher ; one set carder's tools ; one improved railway head, with back, front and full can stop motion ; one 4 delivery draw frame, with back, front and full can stop motion, fitted with single preventer rolls ; one 40 spindle slubber ; one 60 spindle intermediate roving frame ; one 80 spindle fine roving frame ; one 128 spindle combination warp and filling ring spinning frame ; one 72 spindle improved spooler. A sufficient number of gears were sent with these machines to make various changes that may be necessary.

Mason Machine Works, Taunton, Mass.—One 40-in. revolving top flat card ; one Entwistle drum grinder ; one stripper brush ; one set carders' tools ; one railway head, with back, front and full can stop motion ; one 4 delivery draw frame, with back, front and full can stop motion ; fitted with single preventer roll ; one 112 spindle combination warp and filling ring spinning frame ; one 40-in. plain loom ; one 36-in. fancy cotton loom ; one 36-in. 24 harness dobby loom ; half value on combing machinery. All necessary gears with these machines to make the required changes.

The D. A. Tompkins Co., Charlotte, N. C.—One adjustable reel ; one draw-in frame ; one loom box ; one doffer box ; two section beams ; one switch board, complete ; one emery wheel and stand.

Draper Co., Hopedale, Mass.—One 40-in. Northrop loom ; one 28-in. Northrop loom ; one 48 spindle combination wet and dry twister ; one 40 spindle spooler ; one warper, with

creel; four section beams; temples as required; loom findings.

Crompton & Knowles Loom Works, Providence, R. I.—Half value on following: One 32-in loom, with 416 hook jacquard; one 32-in. loom, with leno attachment; one 65-in. 4x1 box loom, with 624 hook jacquard; one 36-in. Knowles "Gem" loom; one 36-in. fancy cotton towel loom; two 16 harness dobbies.

Universal Winding Co., Boston, Mass.—One 6 spindle cone and tube winder.

Woonsocket Machine and Press Co., Woonsocket, R. I.—Half value on one 96 spindle jack roving frame.

Whitin Machine Works, Whitinsville, Mass.—Half value on following: One 40-in. cam loom; one 40-in. loom, with 20 harness dobbie.

T. C. Entwistle, Lowell, Mass.—Half value on one beaming frame.

Fales & Jenks Machine Co., Pawtucket, R. I.—Two combination warp and filling spinning frames, 80 spindles each; one wet twister, combined filling and taper top wind, 70 spindles.

T. B. Wood's Sons, Chambersburg, Pa.—One-fourth value on equipment of shafting, hangers and pulleys used in new extension of building.

Jones & Laughlin Co., Limited, Pittsburg, Pa.—The entire original equipment of shafting, hangers and pulleys.

Schaum & Uhlinger, Philadelphia, Pa.—One top engine drive, self-balancing, hydro-extractor.

The Metallic Drawing Roll Co., Indian Orchard, Mass.—Metallic drawing rolls for railway heads and draw frames as required.

Westinghouse Electric Co., East Pittsburg, Pa.—One 22 K. W., 220 volt direct current motor.

The Aerophor Co., Boston, Mass.—Complete system of "Vortex" humidifiers, including pump, tank and connections.

Beattie Machine Works, Cohoes, N. Y.—One single elastic stitch looper.

E. Jenckes Manufacturing Co., Pawtucket, R. I.—One “Invincible” seamless hosiery knitting machine.

W. W. Altemus & Son, Philadelphia, Pa.—One bobbin winder.

New Bedford Paper Co., New Bedford, Mass.—Cops, cones, tubes, etc., as required.

Charlotte Supply Co., Charlotte, N. C.—All belting as required.

American Supply Co., Providence, R. I.—Heddles, heddle frames, reeds and loom supplies as required.

Loom Picker Co., Biddeford, Me.—Loom supplies.

The Emmons Loom Harness Co.—Cotton harness, reeds and loom supplies.

Roney & Rae Co., Woonsocket, R. I.—Twelve bobbin holders.

Steel Heddle Manufacturing Co., Philadelphia, Pa.—2,500 patented flat steel heddles.

R. A. Blythe, Philadelphia, Pa.—One lot mercerized yarns.

Barber & Colman, Boston, Mass.—One Barber knotter.

National Ring Traveller Co., Providence, R. I.—One lot of spinning and twister travellers.

DeHaven Manufacturing Co., Brooklyn, N. Y.—One lot of spinning and twister travellers.

Victor Shaw Ring Traveller Co., Providence, R. I.—One lot spinning travellers.

Morley Button Manufacturing Co., Boston, Mass.—One lot spinning travellers.

Sykes & Street, New York, N. Y.—Collection of dye stuffs.

New York and Boston Dyewood Co., New York, N. Y.—Collection of dye stuffs.

Victor G. Bloede & Co., Baltimore, Md.—Collection of dye stuffs and mordants.

Wm. J. Matheson & Co., New York, N. Y.—Collection of dye stuffs.

Kutthroff, Pickhardt & Co., New York, N. Y.—Collection of dye stuffs.

Farbenfabriken, of Elberfield Co., New York, N. Y.—Large collection of dye stuffs, over 300 samples.

H. A. Metz, New York, N. Y.—Collection of dye stuffs.

Southern Railway Co.—Half freight rates, over their lines, on entire original equipment of machinery.

English

PROFESSOR FURMAN

ASSISTANT PROFESSORS McLUCAS, DANIEL, KEITT

INSTRUCTOR BRYAN

The purpose of the course in English is to enable the student to acquire the power to express his thoughts with clearness, precision and force; and to cultivate in him a taste for good literature. Elementary English grammar and the rudiments of composition are taught in the Preparatory class.

PREPARATORY CLASS.—This class is carefully prepared for entry upon the work of this College, several of the professors in English having charge of its sections. The intention is to make the English course continuous, so that there may be no break between the preparatory and Freshman work, either in teachers or text-books. The books used in the Preparatory class are: Buehler's Grammar, Gilbert's Studies in Words, and such reading texts as may from time to time be selected by the instructors. Special attention is paid to spelling, definition of words, oral reading, and written exercises.

FRESHMAN CLASS.—A review of the subject of grammar introduces the work of this class. Constant drill is given in theme writing; pupils being expected to make use of the

College Library under direction of instructors. Methods of using dictionaries, encyclopedias, and other reference books, are explained practically to the students. Full supplementary readings are required and practice is given in the writing of abstracts of books so read.

Text-books—Emerson-Lockwood's Lessons in English, Buehler's Practical Exercises in English, Webster's School Dictionary, and such English classics as may be assigned.

SOPHOMORE CLASS.—The study of rhetoric is pursued throughout the Sophomore year. Lewis's Second Manual of English Composition and Rhetoric introduces the course. Constant theme writing is continued. An elementary course in American literature is also given embracing the study of Hawthorne, Lowell, Longfellow, Poe, Lanier, Timrod and other standard American authors.

JUNIOR CLASS.—The work in the Junior class begins with the critical study of Macaulay as an essayist. This is followed by a general course in English literature. Pancost's English Literature is the text-book—this work being supplemented by lectures. Monthly essays are required, and frequent oral readings embracing selections from the principal English authors from Chaucer to the present time.

SENIOR CLASS.—This class is given instruction in the principles of literary criticism. A somewhat full course in Shakespeare study is furnished. Several plays are read in class—the students being orally examined on all questions, grammatical, historical, and ethical, which arise in the study of this author. Monthly essays are required.

History and Political Economy

PROFESSOR MORRISON

The course includes history of the United States, South Carolina history, general history, commercial geography, civics, and political economy.

The method of instruction is a combination of the text-book and lecture methods, with parallel readings, under the instructor's direction as far as practicable. This class-room is supplied with globes, charts, maps and works of reference, in the use of which the young men are carefully trained. The students make liberal use of the many volumes of poetry, historical romance, biography and history found in the College library.

The history of South Carolina and the history of the South receive special attention. "A people which takes no pride in the noble achievements of a remote ancestry will never achieve anything worthy to be remembered by remote descendants." Every effort is made to enable the young men to see and feel as their fathers and forefathers saw and felt.

Text-books—Eggleston's History of the United States and its People (Preparatory); Weber's History of South Carolina and Olin's Commercial Geography (Freshman); Clark's Government and Anderson's New General History (Sophomore); Walker's Political Economy—Briefer Course (Senior).

Mathematics

PROFESSOR BRODIE

ASSISTANT PROFESSORS WALLER, MARTIN, REAVES, SHANK-
LIN

This course presupposes a thorough knowledge of arithmetic and of algebra through quadratics. (See requirements for admission, page 128.

Freshman Class

FIRST TERM.—*Algebra*.—Quadratics (reviewed); simple indeterminate equations; inequalities; theory of exponents, logarithms; proportion and variation; series; binomial theorem.

Text-book—Hall and Knight's *Algebra for Colleges and Schools*.

SECOND TERM.—*Plane Geometry*.—Rectilinear figures; circles; similar figures; comparison and measurement of surfaces of polygons; regular polygons and circles. Special attention is given to the formation, on the part of students, of the habit of clear and accurate reasoning and concise expression.

Text-book—Wentworth's *Geometry*.

Sophomore Class

FIRST TERM.—*Solid Geometry*.—Planes and solid angles; polyhedrons; cylinders and cones; spheres, spherical polygons and pyramids; volume.

Higher Algebra.—Continued fractions; theory of limits, undetermined co-efficients; exponential theorem; equations in general.

Text-books—Wentworth's *Geometry* and Hall & Knight's *Algebra for Colleges and Schools*.

SECOND TERM.—*Trigonometry*.—Measurements of angles; trigonometric functions; right triangle; goniometry;

relations between functions of one angle; functions of multiple angles; inverse functions; trigonometric equations; oblique triangles; De Moivre's theorem; spherical trigonometry; general formulas; right spherical triangle; oblique spherical triangle; applications.

Text-book—Wentworth's Trigonometry.

Descriptive Geometry.—Study of the representation of points, lines, planes, surfaces and solids, and of their relations; tangencies, intersections and developments; shades, shadows and perspective; numerous original exercises.

Text-book—Low's Practical Solid or Descriptive Geometry.

Plane Surveying.—This course includes the general principles and fundamental operations of surveying with compass, level and transit. The field work includes actual surveys of tracts of land, of which the areas are computed and plats are drawn. Experience is given in numerous problems of laying out and dividing up land, and in locating irregular boundaries. Practice is also had in section leveling, laying out terraces, ditches, etc. Ample training is here furnished for the needs of agricultural students, and a preparation is given for the higher work of the engineering courses.

Text-book—Davies-Van Amringe's Surveying.

Students in the Agricultural Course take no mathematics beyond the Sophomore year.

Junior Class

FIRST TERM.—*Analytic Geometry*.—Cartesian and polar systems of co-ordinates; discussion and construction of loci; the straight line; transformation of co-ordinates; circle; parabola; ellipse; hyperbola; general equation of second degree involving two variables; higher plane curves; solid analytic geometry; systems of co-ordinates; equation of the plane; the straight line in space; transformation of co-ordinates; surfaces of the second order.

Text-book—Tanner and Allen's Analytic Geometry.

SECOND TERM.—*Differential Calculus*.—Differentiation of algebraic functions; transcendental functions; successive differentiation and development of functions; functions of two variables; tangents and asymptotes; maxima and minima; radius of curvature; evolutes and involutes; envelopes.

Integral Calculus.—Elementary forms of integration; rational fractions; integration of irrational fractions; successive reduction; integration of functions of two variables; lengths of curves; areas of plane curves; rectification of curves; cubature of volumes.

Text-book—Snyder & Hutchison's Differential and Integral Calculus.

Civil Engineering

(Included in the Department of Mathematics.)

The schedule on page 60 will explain in detail the subjects included in the Civil Engineering course. This course will be found to embrace much that is common to the other engineering courses. Below is an outline of the special work pursued by students in this course in the Junior and Senior years.

To begin this work the student must have completed the mathematical course through trigonometry and plane surveying. For the Senior course he must have a working knowledge of analytical geometry and calculus.

Junior Class

BOTH TERMS.—Use and adjustment of transit, stadia, solar compass and plane-table; topographic surveying with transit and stadia; railroad topography; triangulation; city and hydrographic surveying; map and plan drawing, topographical symbols, etc.

Highway Engineering.—Location, construction and main-

tenance of country roads and city streets; advantages of various materials for road covering; effects of grades and surface upon the cost of transportation; plans and specifications; practical problems in change of grade and relocation, from surveys of existing roads.

Theory of Railway Construction.—Preliminary and location surveys; location from contour map; laying out of simple and compound curves; setting of slope stakes; computation of earthwork; switches; turnouts; theory of economic location; effects of grades, curves and length upon the cost of operation.

Text and Reference Books—Johnson's Higher Surveying; Gillespie's Roads and Railroads; Burne's Highway Construction; Godwin's Field Engineering; Wellington's Economic Location.

Senior Class

BOTH TERMS.—*Railway Engineering.*—Surveys are made for a line of railway a mile or more in length; the necessary plans, profiles and cross-sections are prepared; grades are determined, curves laid out, slope stakes set, and all the needed measurements made to enable the student to compute the excavations and embankments, and to estimate the cost of construction.

Surveys of Water Powers.—Discharge of stream, head and available power; form and dimensions of pond or reservoir; detailed topography of site for dam and determination of its form and dimensions for stability.

Geodesy.—Method of least squares; precise triangulation; base lines; precise leveling; azimuth by solar transit, by polaris and by altitude of the sun; measurement of meridian arcs; the earth as a spheroid; the earth as an ellipsoid; history of geodesy.

Structures.—Building materials; mechanics of construction; derivation of practical formulas; masonry; foundations on land and in water; stability of walls and arches; analyti-

cal and graphical investigation of stresses in plate girders, Howe, Pratt, Warren and other types of highway and railroad bridges, and various forms of roof trusses; bridge design.

Text-books—Wheeler's Civil Engineering; Merriman and Jacoby's Roofs and Bridges; Merriman's Geodesy.

Equipment

The collection of field instruments contains the following: Two 6-inch vernier compasses; 20-inch wye level; engineer's transit, with solar attachment and stadia; plane-table, with 9-inch telescope, vertical circle and stadia; drainage level; 12-foot self-reading leveling and stadia rod; 12-foot New York leveling rod; 10-foot cross-section rod, graduated; Gurley's clinometer, reading to degrees; two surveyor's chains; engineer's chain; standard 100-foot steel tape, graduated to hundredths of a foot; and full supply of ranging poles, flag poles and other accessories. There are also sets of drawing instruments for office work.

In addition to the drawing done under the immediate direction of the instructor in this division, the regular work in drawing and designing provided for civil engineering students is arranged with special view to their needs.

Military Science and Tactics

LIEUT. SIRMAYER, COMMANDANT

Junior and Senior Classes

BOTH TERMS.—The course in military instruction, as prescribed and followed, is both theoretical and practical. The theoretical instruction, given by recitation and lecture, includes the subjects of organization and administration, grand and minor tactics, logistics, castrametation, military engineering, gunnery and pyrotechnics, military history, etc. The practical instruction includes infantry drill, in the school of the soldier, the company, the battalion and the evolutions of the regiment, in both close and extended order, target practice and guard duty, and in the manual of piece in light artillery drill. Practice is also given in signaling with the flag.

In addition to the benefit which the general government derives from the military instruction given at this and other colleges, it is believed that the discipline enforced, the habits of punctuality and obedience inculcated, the improvement in bearing and appearance of those instructed, and also the practice in directing and commanding others, which nearly all in course of time get, is of immense benefit to the students individually.

REGULATIONS, ADMISSION
AND
GENERAL INFORMATION

Regulations of the College

Government

The government of the College is administered by the President with the advice and assistance of the Faculty. The students have free access to the President's office, and all complaints and irregularities are carefully investigated.

The nature of the exercises at Clemson College, complicated by the many laboratories, practical work in the field, especially render punctuality in attendance upon work and systematic effort on the part of the student indispensable. There is, therefore, no place at Clemson Agricultural College for the boy who is self-indulgent and not willing to submit to wholesome control and lawful authority. The discipline of the College is exercised simply to keep the machinery of the institution running smoothly, and those boys who are too reckless to submit to restraint will soon get in conflict with the regulations and will be forced to leave College. The rules and regulations authorized by the Board of Trustees are enforced by the Commandant under the advice of the President, and the Commandant discharges all of the duties imposed upon him, and requires the Cadets to conform to the rules of the College. The main object in view is the boys' education. Those boys who fully appreciate this important fact, and who are striving to do their best for the accomplishment of this end, will find the regulations not a hardship, but rather an aid in the prosecution of the work before them.

Communications from parents, requesting leaves of absence from the College for their sons, must be addressed directly to the President and not through the cadets. The rules governing in cases of permits to visit home during the session of the College require that cadets who have accumu-

lated more than five demerits in any one term, and who have fallen below grade two in their studies on any report, will not be allowed to leave College during the term except in cases of extreme sickness or death in the family. Cadets who receive no demerits during any calendar month will be given a credit of five, to be applied in removing any demerits they may have had charged against them during any preceding month of that term.

Students who have been granted leaves of absence and who stay over the date allowed, unless for sickness or other good and valid reasons, will be required to pay again the incidental fee of \$5.00 before they will be permitted to continue their studies. In case of sickness, a certificate from the attending physician must be submitted to the President.

In addition to the special regulations of the military department, a copy of which is given each cadet, the following general regulations are enforced.

Cadets are subject to military discipline at all times, and are required to take part in drill, guard duty and other military exercises.

All undergraduate students are required to board in the barracks, except those who live with their parents near enough to attend from their homes.

Each student is required to purchase the prescribed uniform; also a pair of over-shoes and a water-proof coat. Students may provide themselves with such work-clothes as they desire.

Those occupying a room are consulted before another student is assigned to that room. A student not satisfied with his room-mate has the privilege of applying for permission to move to another room, and such applications are granted when practicable.

Cadets must at all times be respectful in their bearing to professors and other officers of the College.

The practice known as hazing is positively forbidden, and

any cadet indulging in this practice will be expelled from the College.

Cadets are positively forbidden to use, or have in their possession, intoxicating liquors of any description.

The use of tobacco in any form by cadets is prohibited.

Profanity and gambling are positively forbidden.

All combinations of cadets for the purpose of censuring or praising one of their number are prohibited; also all combinations to defeat the purpose of any regulation of the College.

If any cadet shall consider himself wronged by another, or by an officer of the College, he has the right to complain thereof in writing to the President, who will examine into the complaint and take such measures for redressing the wrong as he may deem proper.

Cadets are forbidden to keep any arms in their possession not issued by the proper authority.

Any cadet receiving 100 demerits during a term of five months will be dismissed.

Any cadet absent from barracks at night without proper authority will be dismissed.

Reports

Each term is divided into four approximately equal parts for the purpose of making up class marks. At the end of each one of these periods a report is sent to the parent giving the standing of the student in the subjects of his class. Parents will be advised to withdraw students who habitually shirk duties.

No student conditioned on any subject can be promoted to a higher class until all conditions are removed.

Any student taking a subject over waives the right to all previous records in that subject, and is placed upon the same footing as students taking the work for the first time.

All students who are put back into any class must take the full work of that class.

Any student desiring to change his course of study must apply for such change within one month from date of entrance.

The students who make the highest average grade during a term are appointed marchers of their respective sections for the succeeding term.

Irregular courses are not allowed to students in the Preparatory department.

Practical work must be made up, hour for hour, under the direction of the instructor.

Text-books are kept at the Cadet Exchange and are furnished to students at wholesale prices.

Matriculation is equivalent to a pledge to conform to the rules and regulations of the College.

Rules for the Appointment of Students

In selecting the students who shall be notified to report to the College, the following rules, prescribed by the Board of Trustees, will govern:

1. Students must undergo a medical examination, and no student will be admitted who is not healthy and free from contagious diseases, including consumption.

2. Students will be apportioned among counties in proportion to representation in the House of Representatives, under the following rules and regulations:

- (a). Boys prepared to enter College classes will have preference over those who can only enter the Preparatory class.

- (b). As between boys of equal preparation, the oldest will have the preference.

- (c). Other things being equal, the first applicants will receive permission to enter.

- (d). When a county has not sent its quota, the places thus left shall be apportioned among the other applicants.

- (e). Applicants not entering within ten days after the

opening of the session will have their rights in the place given to applicants next on the roll.

Preparatory Department

For the benefit of students who are not prepared to enter the College classes a course of one year of preparatory work is provided, in which thorough instruction is given in the elements of English, mathematics, history, and geography. This course is designed to meet the needs of young men, particularly farmers' sons, who have not had the advantages of the thorough and systematic training afforded by many of the town and city schools.

The instruction in this department is under the immediate supervision of the Professors of English, Mathematics, History, and Geology in the College, and is closely articulated with the work of the advanced classes.

The course of study is as follows :

Arithmetic, 5 hours a week.

Algebra, 5 hours a week.

Grammar and Composition, 5 hours a week.

Reading and Spelling, 5 hours a week.

Geography, 5 hours a week, one-half year.

History, 5 hours a week, one-half year.

Students who satisfactorily complete this course will be advanced to the Freshman class. Those who fail to pass to the higher class may review the course the next session. Upon the recommendation of the instructors of the department, a student in the Preparatory class may be permitted, at any time during the session, to stand examinations for admission to the Freshman class.

Requirments for Admission

Each candidate must be at least sixteen years of age.

Certificates of good moral character are required of all candidates not known to members of the faculty; and if the candidate comes from another college, this certificate must show that he was honorably discharged.

For admission into the Freshman class a thorough knowledge is required of arithmetic, elementary algebra, English grammar, geography, and history of the United States.

Arithmetic.—The applicant is expected to have a thorough practical acquaintance with the ordinary principles and operations of arithmetic. Wentworth's Practical Arithmetic is recommended as a suitable text-book.

Algebra.—The detailed requirements are as follows: Definitions and notation, fundamental operations, including laws of signs, and the interpretation of negative results; use of parentheses; factoring; highest common factor; lowest common multiple; simple and complex fractions; simple integral and fractional equations with one unknown number, and problems leading to such equations; simultaneous equations of the first degree, with applications to solution of problems; involution of monomials and polynomials; evolution of monomials and polynomials; theory of exponents with applications; radicals, including solution of equations involving rationalization; simple operations with imaginary expressions; pure and affected quadratic equations containing one unknown number, with application to problems.

The student should cover carefully the whole ground here specified, and should acquire a clear understanding not only of algebraic processes but of the principles and reasons involved in every operation. Students fail on entrance examinations more frequently because of imperfect knowledge of the subject matter passed over, than because they have not gone far enough in the text-book.

A satisfactory treatment of the topics in Algebra may be found in Wentworth's New School Algebra (used in the public schools).

English.—Applicants are examined in spelling, sentence analysis, and oral reading; and are required to write short essays on an assigned subject.

Geography.—The applicants must possess a fair knowledge of general geography, such as may be obtained from a proper study of Frye's Advanced Geography, Maury's Manual of Geography, or other standard text-book of equal grade. The following topics will be especially emphasized in the entrance examinations: Outlines and positions of the continents, and locations of the principal mountains, plateaus, river basins, and coastal lowlands; influences of land forms upon the life and industries of the inhabitants; locations and outlines of important countries, particularly those of America and Europe, and of the States in the United States; locations of great cities in all countries, and conditions favorable to the growth of cities.

History.—Eggleston's History of the United States and Its People is the text-book recommended. Any other school history may be used in place of the one named.

Entrance Examination

Students upon arrival at Clemson College at the opening of the session must report at once to the President's office and matriculate before they will be assigned to quarters in the barracks. No student will be admitted to any of the classes or examinations of the College before matriculation and payment of the fees.

Five days before the opening of College each year the barracks will be prepared for the accommodation of new and conditioned students, at which time the entrance examinations will be held. All students who contemplate entering College for the first time are urged to report during this

period and stand the entrance examinations. Board will be free during these five days to new students and to those members of the classes for the previous year who have conditions in theoretical or practical work to bring up. The charges for board will begin with the opening of the session on September 9th, 1903. Upon presentation at the President's office of a certificate from the Examining Committee stating that the holder has passed satisfactorily the subjects required, he will be assigned to the class recommended by the Committee. For admission to the higher classes, students must be prepared to stand examinations covering the subjects of the lower classes as indicated in the course of study to be found on other pages of this catalogue.

A Committee consisting of five members of the Faculty is appointed annually by the President, which is known as the Re-examination Committee. The duties of this Committee shall be to examine carefully into the merits of all petitions for re-examinations referred to them by the President, and to report to the Faculty with recommendations. No student is entitled to a second examination except by special permission of the Faculty.

Tuition

The following extract is taken from Section 1120, Revised Statutes of South Carolina, 1893, Volume I., setting forth the powers and duties of the Board of Trustees: "They shall charge each student a tuition fee of forty dollars per annum; * * * indigent students shall not be required to pay said tuition fee."

In accordance with this law, residents of South Carolina are granted free tuition upon presentation of the following certificate, properly signed:

CERTIFICATE OF INABILITY TO PAY TUITION.

THIS IS TO CERTIFY, *That I am unable to pay tuition for my.....in the Clemson Agricultural College for the session of 1903-1904.*

.....
Father or Guardian.

I hereby certify that, to the best of my knowledge and belief, the above statement is true.

.....
County Auditor.

All other students pay the tuition fee of \$40.00 per session.

Blank certificates will be furnished upon application to the President.

Expenses for the Session of 1903-1904

For free tuition students.....\$102 42

For tuition paying students..... 142 42

These charges are due and payable in advance on the first day of each quarter, as follows :

September 9, 1903, or on date of entrance:

Incidental fee\$ 5 00

Medical fee... 5 00

Uniform 23 00

Board and washing, first quarter..... 16 88

Breakage fee (see page)..... 2 00

Total for free tuition student..... \$51 88

Tuition, first quarter.....\$10 00

Total for tuition paying students..... \$61 88

November, 16, 1903.

Board and washing, second quarter.....\$16 88

Total for free tuition students..... \$16 88

Tuition, second quarter.....\$10 00

Total for tuition paying students..... 26 88

January 27, 1904.

For free tuition students, third quarter.....	16 88
For tuition paying students.....	26 88

April 4, 1904.

For free tuition students, fourth quarter....	16 88
For tuition paying students.....	26 88

A deposit of \$2.00 is required of all students upon entrance, according to the following order of the Board of Trustees:

At the beginning of a session each student is required to deposit \$2.00 with the Treasurer, to be known as a breakage fee. Whenever the property of the College is damaged, the actual cost of the repair of the property damaged shall be charged to the student who damaged the property. If, however, the responsibility cannot be fastened upon any student, the amount of the damage shall be prorated equally among all the students. At the end of the session any amount to the credit of a student shall be returned to him.

The price of uniforms is subject to fluctuations of the market.

To the above must be added the cost of books and stationery, which may be obtained at the Cadet Exchange at wholesale prices; also \$1.50 for diploma, payable on graduation.

Remittances should be made in cash, money order, or New York Exchange, *not by local checks*, to P. H. E. SLOAN, Treasurer, Clemson College, S. C. Banks charge *exchange on local checks*.

A deduction will be made for board and washing only when a student is absent one month or more.

Uniform

The College uniform is of cadet gray of the West Point pattern, except that the College button is used. For military full dress, the cadet officers wear a plume and sash, and the

non-commisisoned officers and privates a pompon. This uniform is made of the best Charlottesville mills goods, is neat, and considering the make and material, is very inexpensive.

Irregular Courses

Students are earnestly advised to pursue regular courses; but those who for satisfactory reasons are unable to do so, may, upon the approval of the Faculty, pursue irregular courses. No student whose time is not fully occupied will be permitted to remain at the College. An application for an irregular course must be accompanied by the written approval of parent or guardian, and of instructors in all subjects for which application is made. Diplomas are not issued to irregular students; but certificates of proficiency will be given when the prescribed work granted by the Faculty has been completed.

A student who is permitted to take an irregular course will be assigned to a member of the Faculty, who will advise the student in reference to the character and degree of work it is best for him to pursue, and after this course has been approved, no other changes will be allowed without the endorsement of his adviser.

Special Courses

Besides students above indicated, who are members of the military organization in the College, there may be farmers and others of mature age who may desire to avail themselves of the special privileges offered by this College to work along their lines. To such persons the opportunity is offered, under the advice of the Director of the department, to pursue special lines of investigation in any one of the subjects or divisions, provided attention can be given them without detriment to the regular classes of the department. These persons will be admitted for the prosecution of such work after

they have satisfied the Director of the department that they have sufficient qualification to undertake the work. They will be excused from the military regulations, but will be under the general rules of good behavior and diligent prosecution of the course selected. The fees, except the price of the uniform and board in the barracks, will be required. They may board anywhere in the community except in the barracks.

Degrees

Students who complete satisfactorily any one of the regular prescribed four years courses of instruction in Mechanical and Electrical Engineering, Chemistry and Agriculture, Civil Engineering, Biology, Textile Industry, or Metallurgy, will be awarded the degree of Bachelor of Science at commencement.

Distinguished Students

Students who make an average of 90 per cent. or more on each and every study for the entire session are designated as *distinguished*.

Library

In the main building are a series of rooms specially constructed for the use of the library. There are now on the shelves 5,337 volumes of literature, history, biography, and science, and about 2,200 volumes of government publications, together with about 3,000 pamphlets. The library is supported by an annual appropriation, and the number of books is added to each year. In recent purchases special efforts have been made to procure books on South Carolina history and literature.

The library is indebted for valuable gifts to the following: Hon. B. R. Tillman, Rev. S. S. Law, Family of Gov. Perry, LeRoy J. Halsey, Wm. J. Rivers, Thos. G. White, Ladies of the Carolina Monument Association, Charles Cotesworth

Pinckney, John S. Goodman, Hon. J. L. M. Irby, Hon. A. C. Latimer, P. H. E. Sloan, Mrs. W. M. Riggs, Hon. D. Wyatt Aiken, Mrs. E. A. Thurston, J. E. All, Mrs. Jno. E. Lewis, Mrs. Wm. Henry Trescot, Col. R. W. Simpson. H. M. Stackhouse, Jno. C. Calhoun, Rev. J. W. Daniel, Wm. A. Courtenay, R. N. Brackett, Various Staffs of *The Clemson Chronicle*, P. H. Mell, David Kohn, J. C. Seale.

Farmers' Institutes

During the year farmers' institutes are held, under the management of the College, in many Counties of the State. The President and Professors of Agriculture, Chemistry, Horticulture, Dairying, Veterinary Science, Botany and other members of the Faculty take part in these institutes. The effort is made to bring practical information to the farmer, and to give him the results of scientific investigation in the interest of Agriculture. The success thus far attained is most encouraging, and leads to the hope that these institutes may become a permanent feature in the work of the College.

They will be continued during the coming year. A special institute of seven days' duration will be held at the College during the month of August, in which, besides the College Faculty, a number of prominent speakers from this and other States are expected to participate.

Farmers wishing an institute held in their County or community should write to the President.

Student Labor

The College assumes no obligation to furnish employment to students for wages. Considerable manual labor is necessary to carry on the various departments of the College. When practicable students are employed in this work and are paid for it at the rate of eight cents an hour; but no student is allowed to undertake work that interferes with his College course. The number of students who apply for work always

exceeds the number that can be employed. Students who enter late are at a special disadvantage in securing this work.

Religious Influence

Every effort is made to surround the students with safe religious influences. There is preaching in Memorial Hall every Sunday morning by ministers of the different denominations, and chapel services are conducted every morning by the President and other members of the Faculty. All students are required to attend these exercises unless specially excused.

A Sunday School, at which attendance is voluntary, also meets every Sunday morning, and students are encouraged and urged to attend.

Young Men's Christian Association

This is a voluntary organization of the students, and is entirely under their management. The objects of the Association are to promote Christian fellowship among its members and aggressive Christian work among the students. The meetings are held in Memorial Hall every Sunday evening. The membership is of two classes—active and associate. A member in good standing of any evangelical church may become an active member of the Association, and any young man of good moral character may become an associate member. The Faculty are in hearty sympathy with the work of the Association, and render cheerful service when requested to do so. Parents and guardians are advised to encourage the students to join the Association as soon as they reach the College.

Care of the Sick

The College Surgeon will keep parents fully informed of the condition of sick students. In case of serious illness parents are notified by telegraph.

Students have permission to call on the Surgeon at any time for advice and treatment. The Surgeon cannot undertake to notify parents every time a student reports to the hospital for medicine or rest, on account of some slight complaint; but parents may rest assured that they will hear from the Surgeon promptly in case of sickness of any consequence.

The health record for the past year has been exceptionally good, and many sanitary improvements have been made to insure the continued health of the students.

The College rules require that all students be vaccinated, and parents are advised to have this done before sending their sons away from home.

Society of the Alumni

This Association is composed of the graduates of the College, and there is an annual meeting at the period of Commencement exercises at which time one of the members selected by the Association delivers an address in Memorial Hall. The orator for 1903 is B. R. Tillman, Jr., Trenton, S. C. The officers for 1902-1903 are:

J. S. GARRIS, President

D. H. HENRY, Vice-President.

A. B. BRYAN, Secretary.

W. W. KLUGH, JR., Corresponding Secretary.

R. E. LEE, Treasurer.

Museum

The collections of botanical, entomological and geological specimens are small. An earnest effort is being put forth by the heads of these divisions to make the Museum an important department of the College. By recent enactment of the General Assembly, the State Geologist is required to send duplicates of everything he collects in conducting the geological survey of South Carolina.

Literary Societies

Three literary societies, the Calhoun, the Columbian and the Palmetto, furnish a valuable supplement to the work of the College. These societies afford facilities for practice in debate, oratory, declamation and essay-writing, and their members acquire valuable knowledge of parliamentary law and usage. The meetings are held weekly on Friday evenings. Public celebrations and contests are also held at intervals during the year, at which there are debates, orations and declamations by the students.

The societies occupy halls in the main College building, which are furnished with carpets and opera-chairs, and are maintained entirely by the students. A small fee is charged for initiation, and there are also monthly dues of a few cents to meet running expenses. All students are advised to join one of these societies. The students award medals for excellency in debate, oratory, and declamation.

There is also a monthly published by the students, called *The Clemson College Chronicle*, and the editorial staff of this periodical also awards three medals for the best story, the best poem and the best essay appearing in that publication during the year. This magazine is designed to encourage literary work among the students.

By order of the Board of Trustees, the following days have been set aside as Society days: R. E. Lee's birthday, January 19th; Calhoun's birthday, March 18th; and May 1st; on which occasions the societies are expected to hold public exercises in Memorial Hall. The Columbian Society holds a celebration on January 19th, the Calhoun on March 18th, and the Palmetto on May 1st. At each of these contests, judges selected by the societies will determine the successful debator or speaker, and these successful contestants will represent the societies at Commencement, at which time the judges will be selected by the Faculty, and

the best orator will be awarded a gold medal called the Trustee Medal, awarded by the Board of Trustees.

Science Club

The Clemson College Science Club was organized for the purpose of promoting knowledge of the progress of the natural sciences, theoretical and applied. Public meetings are held every month, at which subjects of general scientific interest are discussed by members of the Faculty and advanced students of the College.

Lecture Course

A lecture course, employing some of the best talent on the American platform, has been provided for the coming season. These lectures will be delivered in Memorial Hall, and will occur monthly while the course is in progress. The cost to students will be about \$1.00 for the course.

Cadet Exchange

A Cadet Exchange is maintained, where students may purchase at wholesale prices necessary articles, such as books, stationery, collars, cuffs, underwear, etc.

Athletics

It is the policy of the College to sanction and encourage athletics so long as studies and other duties are not interfered with. Class records show that, as a rule, students engaged in athletics do as well in their classes as those who are not. Should future experience reverse these records, athletic sports will be restricted or prohibited altogether.

The following resolution relative to athletics has been passed by the Faculty: That it is the sense of the Faculty that only cadets in good class standing be permitted to play in any intercollegiate game of tennis or of ball—either baseball or football—to appear in any public exhibition or on the

rostrum; or to attend as a college representative any meeting of any sort at any time or place.

The most popular games this year are baseball and football. It is assumed that parents are willing for their sons to participate in these games unless the President is definitely notified to the contrary. The athletic teams will be permitted to take a few trips each season, usually on Saturdays, to play inter-collegiate games. Students must file written permission from parents for these trips.

The Southern Inter-Collegiate Athletic Association has decided that it is to the best interests of athletics to have an Athletic Council, consisting of members of the Faculty and of the student body. This Council is to consist of nine members—two members of the Faculty selected by the students for President and Secretary-Treasurer respectively, three members of the Faculty chosen by the Faculty and four students.

On May 1st there will be a contest between the students in the direction of general field work. This will be made a special occasion, at which time contests in general field athletics will be held and this day be known as Field Day.

The Clemson Pictures

Following is a list of the oil-paintings bequeathed by Thomas G. Clemson. This collection, with additional portraits, may be seen in the President's office in the Agricultural building:

1. Virgin and Child.....Rubens
2. Head of Velasquez.....
3. Landscape... . Poussin
4. Flower Piece.. . . . Zegers
5. The Jesuit with Medallion.....Teniers
6. Fruit, etc. Deheem
7. Student's Repast Vansomer

8. Peasant Eating Soup.....Frans Hals
9. Adoration (on copper).....Frans Hals
10. Boy Mending Pen.....Spanish
11. Head Study Greuze
12. Flowers Robert
13. Cattle Louis Robert
14. Goats and Sheep.....Louis Robert
15. Landscape Louis Robert
16. Magdalen Van Schendel
17. Landscape Fearnley
18. Gateway Tavernier
19. Titian Placing his Model.....
20. The Quarrel Venneman
21. Reconciliation.. . . .Venneman
22. Two Old Men Venneman
23. Scene in Spain.....Bossnet
24. Marine View in Holland.....Francia
25. Poverty and Suffering DeBlock
26. Group of Lambs Louis Robert
27. Tasso in Prison Visited by Montaigne. Copy after Gallait
28. Magdalen, Study after Murillo.....DeBlock
29. Girl of Antwerp with two Dogs....Copy after Landseer
(Original in the gallery of King Leopold of Belgium.)
30. Landscape.....Copy of Koekkoek by Louis Robert
31. Waterfall.....Copy of Auerbach by L. Robert
32. Peasant Girl.....By an Antwerp Artist
33. Gate of the Alhambra.....Copy of Bossnet
34. Beatrice Cenci.. Very old copy ; done before original had
faded.
35. Mother Teaching Son.....Copy
36. Landscape.. . . .
37. Old Man Smoking.....Leys (Copy)



DEGREES, HONORS
AND
LIST OF STUDENTS

DEGREES AND HONORS

Graduates

At the Commencement, June 17th, the degree of Bachelor of Science was conferred upon the following graduates:

Course in Chemistry and Agriculture

E. B. Boykin.....	Darlington County
E. Brockmann, Jr.....	Richland County
J. M. Burgess	Clarendon County
G. H. Hardin.....	Oconee County
J. E. Martin, Jr.....	Charleston County
G. F. Mitchell.....	Charleston County
L. H. McCullough.....	Williamsburg County
F. K. Norris.....	Orangeburg County
S. M. Robertson.....	Pickens County
D. H. Sally.....	Aiken County
J. B. Tinsley.....	Union County
M. E. Zeigler.....	Orangeburg County

Mechanical and Electrical Course

G. E. Bamberg.....	Bamberg County
B. H. Barre.....	Lexington County
E. G. Campbell.....	Charleston County
A. B. Carr.....	Richland County
G. B. Clinkscales.....	Spartanburg County
W. W. Coleman.....	Aiken County
F. Crawford	Pickens County
C. Douthit	Anderson County
J. C. Earle.....	Anderson County
C. N. Gignilliat.....	Oconee County
F. M. Gunby.....	Orangeburg County
F. M. Jordan.....	Oconee County

E. J. Larsen.....	Colleton	County
J. D. Meador.....	Union	County
T. H. Munro.....	Union	County
G. T. McGregor.....	Richland	County
H. T. Poe, Jr.....	Greenville	County
T. R. Phillips.....	Orangeburg	County
J. M. Rodger.....	Union	County
C. H. Seigler.....	Aiken	County
M. A. Sitton.....	Anderson	County
W. F. Sneed.....	Charleston	County
S. C. Stewart.....	Pickens	County
H. G. Stokes.....	Hampton	County
D. A. J. Sullivan.....	Charleston	County
S. M. Ward, Jr.....	Georgetown	County
J. B. Watkins.....	Saluda	County
H. A. Wilson.....	Sumter	County

Course in Civil Engineering

H. T. Cantey.....	Clarendon	County
C. L. Reid.....	York	County

Course in Textile Industry

A. R. Barrett.....	York	County
J. H. Brown	Oconee	County
W. E. Chapman.....	Greenville	County
W. F. Cole.....	North Carolina	
W. B. Cothran.....	Greenwood	County
B. C. Cromer.....	Anderson	County
J. E. Gettys.....	York	County
David Jennings	Charleston	County
H. B. Jennings, Jr.....	Charleston	County
D. Kohn.....	Orangeburg	County
H. F. Little.....	Spartanburg	County
F. E. Pearman.....	Anderson	County
W. T. Prescott.....	Edgefield	County

T. C. Shaw.....	Abbeville County
J. H. Spencer.....	York County
T. B. Spencer.....	York County
W. G. Templeton.....	Abbeville County

Distinguished Students

Students who make an average of 90 per cent. or more on each and every study for the entire session are designated as *distinguished*. The following students attained this distinction during the session of 1901-1902:

Senior Class: S. C. Stewart.

Junior Class: T. S. Gandy and T. M. Harvey.

Postgraduate Students

M. E. Bradley	Abbeville
J. W. Gantt	Virginia
G. H. Hardin	Oconee
H. T. Poe	Greenville
S. M. Robertson	Pickens

Undergraduates

Senior Class

NAME	COURSE	COUNTY
N. H. Alford	Text.	Marion
W. H. Barnwell	Mech. Elec.	Sumter
J. T. Beaty	Civil	North Carolina
W. E. G. Black	Mech. Elec.	Spartanburg
C. E. Boineau	Text.	Horry
J. L. Bradford	Civil	Lexington
W. O. Cain	Text.	Sumter
W. B. Chisolm	Mech. Elec.	Charleston
J. C. Cullum	Text.	Lexington
J. P. Cummings	Text.	Fairfield
F. H. Cunningham	Text.	Anderson

NAME	COURSE	COUNTY
J. G. Cunningham	Text.	Anderson
F. G. DeSaussure	Mech. Elec.	Charleston
D. E. Earl	Text.	Pickens
E. D. Ellis	Mech. Elec.	Abbeville
S. W. Epps	Agri.	Williamsburg
E. R. Finger	Civil	Spartanburg
L. W. Fox	Text.	Lexington
Benj. Freeman	Agri.	Charleston
T. S. Gandy	Mech. Elec.	Darlington
B. H. Gardner	Mech. Elec.	Aiken
W. D. Garrison	Agri.	Anderson
J. P. Glenn	Text.	Spartanburg
M. A. Grace	Mech. Elec.	Colleton
H. Green	Mech. Elec.	Sumter
C. B. Hagood	Text.	Pickens
J. E. Harrall	Mech. Elec.	Chesterfield
T. M. Harvey	Mech. Elec.	Berkeley
R. B. Haynsworth	Mech. Elec.	Florence
W. A. Holland	Mech. Elec.	Anderson
D. G. Humbert	Text.	Pickens
S. L. Jefferies	Agri.	Cherokee
B. H. Kaigler	Mech. Elec.	Lexington
L. O. King	Mech. Elec.	Anderson
G. A. Larsen	Text.	Colleton
B. H. Lawrence	Mech. Elec.	Darlington
C. W. Legerton	Text.	Charleston
D. G. K. Lewis	Mech. Elec.	Oconee
D. S. Lewis	Mech. Elec.	Oconee
V. Livingston	Mech. Elec.	Marlboro
H. N. McCrary	Text.	Anderson
C. W. McSwain	Text.	Laurens
H. W. Marvin	Mech. Elec.	Colleton
A. J. Milling	Mech. Elec.	Greenwood
M. M. Mitchell	Agri.	Aiken

NAME	COURSE	COUNTY
G. L. Morrison	Text.	North Carolina
N. W. Newell	Mech. Elec.	Anderson
G. F. Norris	Mech. Elec.	Orangeburg
B. F. Pegues	Agri.	Marlboro
T. S. Perrin	Text.	Abbeville
H. R. Pollitzer	Mech. Elec.	Beaufort
J. F. Prioleau	Mech. Elec.	Beaufort
P. J. Quattlebaum	Mech. Elec.	Saluda
F. K. Rhodes	Text.	Florence
J. T. Robertson	Mech. Elec.	Abbeville
D. H. Sadler	Mech.	York
H. C. Sahlmann	Civil	Charleston
D. S. Taylor	Text.	Anderson
H. C. Tillman	Mech. Elec.	Edgefield
E. B. C. Watts	Agri.	Chesterfield
J. B. Whitney	Text.	Georgia
W. M. Wightman	Mech. Elec.	Dorchester
R. G. Williams	Text.	Greenville
J. C. Wylie	Mech. Elec.	Chester
J. H. Wyse	Civil	Richland
T. B. Young	Agri.	Florence

Junior Class

E. P. Alford	Mech. Elec.	Florence
V. Baker	Mech. Elec.	Cherokee
R. H. Breese	Mech. Elec.	North Carolina
E. F. Brown	Mech. Elec.	Anderson
S. G. Bryan	Agri.	Williamsburg
J. A. Carson, Jr.	Mech. Elec.	Saluda
H. F. Cheatham	Mech. Elec.	Abbeville
J. R. Connor	Agri.	Berkeley
P. C. Cothran	Civil	Greenwood
H. W. Crouch	Civil	Charleston
C. Dew	Mech. Elec.	Greenwood

NAME	COURSE	COUNTY
J. A. Drake	Civil	Marlboro
P. L. Elias	Mech. Elec.	Charleston
G. O. Epps	Agri.	Williamsburg
S. J. Faris	Mech. Elec.	York
S. I. Felder	Mech. Elec.	Orangeburg
S. Ford	Text.	Fairfield
J. A. Forsythe, Jr.	Civil	North Carolina
John Gelzer, Jr.	Mech. Elec.	York
V. B. Hall	Mech. Elec.	York
F. T. Hamlin	Text.	Anderson
A. M. Henry	Mech. Elec.	Abbeville
H. C. Hightower	Mech. Elec.	Bamberg
J. M. Hill	Mech. Elec.	Bamberg
S. T. Hill	Mech. Elec.	Abbeville
A. E. Holman	Mech. Elec.	Orangeburg
F. W. Lachicotte	Mech. Elec.	Georgetown
T. N. Lide	Mech. Elec.	Marion
L. Lipscomb	Civil	Cherokee
H. M. Manigault, Jr.	Mech. Elec.	Dorchester
F. D. Marjenhoff	Mech. Elec.	Charleston
H. W. Matthews	Mech. Elec.	Bamberg
W. F. Mauldin	Agri.	Pickens
John Maxwell	Mech. Elec.	Anderson
R. E. Miller	Text.	Pickens
I. H. Morehead	Mech. Elec.	Greenville
G. T. McGregor	Mech. Elec.	Richland
G. W. McIver	Mech. Elec.	Charleston
W. M. McWhorter	Mech. Elec.	Anderson
J. C. Norton	Mech. Elec.	Horry
S. O. O'Bryan	Agri.	Williamsburg
V. C. Platt	Mech. Elec.	Berkeley
G. L. Preacher	Mech. Elec.	Barnwell
C. Y. Reamer	Mech. Elec.	Richland
O. M. Roberts	Mech. Elec.	Greenwood

NAME	COURSE	COUNTY
J. E. Schachte	Mech. Elec.	Charleston
J. McM. Schorb	Mech. Elec.	York
H. R. Sherard	Civil	Anderson
J. R. S. Siau, Jr.	Mech. Elec.	Georgetown
M. P. Smith	Agri.	Charleston
W. B. Sparkman	Mech. Elec.	Georgetown
J. P. Tarbox	Mech. Elec.	Georgetown
W. L. Templeton	Mech. Elec.	Abbeville
E. A. Thornwell	Mech. Elec.	York
W. H. O. VanWyck	Civil	Anderson
W. P. Walker	Agri.	Barnwell
J. F. Williams	Text.	Pickens
V. McB. Williams	Text.	Greenville
H. S. White	Mech. Elec.	Berkeley
J. A. Wier	Mech. Elec.	Greenwood
F. C. Wyse	Civil	Richland

Sophomore Class

C. B. Abell	Mech.	Chester
W. W. Anderson	Text.	Greenwood
C. P. Ballenger	Mech.	Oconee
J. G. Barnwell	Mech.	Sumter
H. W. Barre	Agri.	Lexington
J. C. Beard	Mech.	Anderson
W. S. Beaty	Text.	Anderson
M. Bell	Mech.	Georgia
M. B. Booth	Text.	Sumter
L. E. Boykin	Agri.	Darlington
F. K. Breazeale	Mech.	Anderson
Judson Brodie	Text.	Aiken
H. G. Bryan	Agri.	Barnwell
J. C. Caldwell	Mech.	Abbeville
S. W. Cannon	Mech.	Newberry
J. L. Coogan	Mech.	Charleston

NAME	COURSE	COUNTY
L. S. Connor, Jr.	Agri.	Orangeburg
W. D. Connor	Agri.	Orangeburg
F. E. Cope	Text.	Aiken
E. P. Crouch	Mech.	Charleston
E. J. DaCosta	Mech.	Beaufort
W. K. Davenport	Text.	Cherokee
S. C. Dean	Text.	Anderson
E. B. Dibble	Mech.	Charleston
W. H. Donly	Mech.	Lexington
T. E. Drew	Mech.	Colleton
W. F. DuPre	Mech.	Pickens
J. E. DuRant	Text.	Sumter
T. R. Ellison	Mech.	Fairfield
T. K. Elliott	Mech.	Fairfield
W. G. Erwin	Text.	Anderson
J. T. Erwin	Text.	Abbeville
H. H. Evans	Agri.	Sumter
R. P. Evans, Jr.	Mech.	Charleston
H. S. Farley	Mech.	Spartanburg
J. B. Fickling	Mech.	Richland
S. B. Folk	Mech.	Colleton
T. H. Fox	Text.	Lexington
A. A. Gandy	Text.	Darlington
R. B. Gandy	Mech.	Darlington
R. F. Gooding	Mech.	Fairfield
J. C. Coggans, Jr.	Mech.	Newberry
R. M. Griffin	Text.	Richland
C. Hanvey	Mech.	Abbeville
G. B. Holland	Mech.	Anderson
T. B. Jacobs	Agri.	Lexington
J. M. Jenkins	Agri.	Charleston
W. F. Johnson	Mech.	Bamberg
E. H. Jones	Mech.	Abbeville
C. P. Josey	Mech.	Darlington

NAME	COURSE	COUNTY
W. A. Keenan	Mech.	Richland
B. O. Kennedy	Mech.	Kershaw
C. E. A. Lathrop	Mech.	Orangeburg
H. W. Lathrop	Mech.	Orangeburg
B. F. Lee	Mech.	Anderson
C. J. Lemmon	Agri.	Sumter
R. L. Link	Mech.	Abbeville
A. L. Matthews	Mech.	Newberry
W. M. Mayes	Mech.	Newberry
J. B. Moseley, Jr.	Mech.	Abbeville
E. J. H. Muller	Mech.	Charleston
M. L. Murph	Mech.	Orangeburg
E. C. McArthur	Mech.	Cherokee
E. R. McIver	Agri.	Darlington
C. H. Newman	Mech.	Chesterfield
J. J. O'Hagan	Text.	Charleston
J. G. Parks	Mech.	Edgefield
E. E. Porter	Mech.	Cherokee
M. S. Reeves	Text.	Charleston
J. C. Richardson	Mech.	Hampton
J. W. Riser	Mech.	Newberry
C. R. Robinson	Mech.	Spartanburg
J. H. Rodger, Jr.	Text.	Union
F. M. Routh	Mech.	Oconee
J. W. Ruff	Mech.	Charleston
M. B. Sams	Text.	Cherokee
C. C. Schirmer, Jr.	Mech.	Charleston
A. McL. Shealy	Agri.	Saluda
M. C. Shirley	Mech.	Anderson
N. P. Shuler	Mech.	Berkeley
J. K. Simpson	Mech.	Laurens
L. P. Slattery	Mech.	Greenville
F. P. Sloan	Agri.	Anderson
Simon Sorentrue	Mech.	Orangeburg

NAME	COURSE	COUNTY
A. J. Speer	Mech.	Abbeville
J. W. Stickley	Mech.	Beaufort
F. R. Sweeny	Mech.	Spartanburg
D. B. Swygert	Mech.	Laurens
W. H. Taylor	Mech.	Oconee
S. L. Verner	Agri.	Oconee
J. W. VonHasseln	Text.	Anderson
N. Wakefield	Text.	Abbeville
L. W. Walker	Mech.	Clarendon
F. E. Watkins, Jr.	Mech.	Anderson
R. M. Watson	Agri.	Saluda
C. Webb	Mech.	Greenwood
W. S. Weston	Mech.	Richland
W. C. Wilbur	Text.	Charleston
A. M. Williams	Agri.	Charleston
J. H. Williams	Mech.	Greenville
W. H. Wise	Mech.	Barnwell
L. S. Wood	Mech.	Cherokee
A. Youmans	Mech.	Barnwell
C. P. Zeigler	Mech.	Spartanburg
J. C. Zimmerman	Mech.	Orangeburg

Freshman Class

D. G. Adams.....	Darlington
W. C. Adams.....	Marlboro
C. R. Alexander.....	Chester
F. G. Alexander.....	Charleston
R. T. Allston.....	Georgetown
W. W. Altman.....	Berkeley
W. D. Anderson.....	Cherokee
G. C. Cauthen.....	Lancaster
D. F. Cherry.....	Charleston
A. F. Cleveland.....	Spartanburg
C. Coles.....	Richland

In preparing catalogue, a sheet of manuscript was lost, and the following names were thus omitted from the roll of the Freshman Class:

J. H. Barksdale	Greenwood
H. S. Bartless	Beaufort
T. F. Barton, Jr.....	Orangeburg
W. S. Baskin	Abbeville
W. A. Beaty	Fairfield
A. T. Beaver	Georgia
W. Beckett	Charleston
L. Bellinger	Chesterfield
O. H. Bissell, Jr.....	Charleston
J. C. Boesch	Charleston
J. T. Bolt	Anderson
R. E. Bowen	Pickens
J. W. Bradley	Greenwood
E. C. Breese	North Carolina
J. A. Brice, Jr.....	Fairfield
A. E. Brock	Clarendon
O. R. Brown	Fairfield
A. L. Brunson, Jr.....	Edgefield
J. C. Brunson.	Florence
I. W. Bull	Orangeburg
T. B. Caldwell	Spartanburg
E. P. Campbell	Charleston
L. F. Carpenter	Anderson



O. B. Coskry	Clarendon
A. H. Cottingham	Marion
T. J. Crane	Laurens
W. H. Crawford	Richland
P. S. Cromer	Abbeville
I. C. Cross	Chester
H. E. Davison	Cherokee
W. A. C. DeLorme	Darlington
St. J. Dendy	Oconee
O. L. Derrick	Lexington
S. L. Dreher	Lexington
W. D. Drew	Barnwell
A. P. DuBose	Kershaw
A. F. H. Dukes, Jr.	Orangeburg
S. E. Dunbar	Barnwell
F. M. Dwight	Sumter
C. F. Elliott	Fairfield
A. G. Ellison	Fairfield
A. L. Ervin	Florence
R. H. Evans	Newberry
L. Fields	Darlington
S. L. Fort	Cherokee
J. A. Gelzer	York
T. L. Goodwin	Anderson
R. D. Graham	Sumter
C. A. Grainger	Horry
F. L. Habenicht	Fairfield
L. L. Harris	Anderson
S. P. Harper	Williamsburg
H. C. Hastings	Spartanburg
J. W. Hicklin	Chester
D. H. Hill	Abbeville
H. M. Hill	Abbeville
E. S. Hitch	Georgia
L. R. Hoyt	Sumter

F. H. Huggins.....	Clarendon
R. C. Hunter.....	Newberry
J. M. Jackson.....	Orangeburg
W. E. Jaycocks.....	Colleton
H. S. Jenkins.....	Barnwell
A. S. Jennings.....	Orangeburg
E. D. Jervey.....	Charleston
J. E. Johnson.....	Florence
S. L. Johnson.....	Charleston
E. M. Kamminer.....	Richland
J. W. Keel.....	Barnwell
R. M. Kennedy, Jr.....	Kershaw
J. A. Killian.....	Richland
J. Klincke.....	Charleston
W. J. Latimer.....	Abbeville
H. G. Lewis.....	Oconee
L. C. Lewis.....	Edgefield
S. C. Little.....	Spartanburg
J. Lucas.....	Spartanburg
C. W. Macke.....	Orangeburg
J. E. Major.....	Anderson
B. H. Martin.....	Pickens
L. B. Martin.....	Oconee
A. A. Merrick.....	Oconee
G. F. Miller.....	Orangeburg
J. M. Miller.....	Lexington
G. H. Moore.....	Spartanburg
H. W. Moore.....	Oconee
W. C. Moore.....	Lee
J. M. Moss, Jr.....	Orangeburg
E. B. Muldrow, Jr.....	Sumter
A. R. McAliley.....	Chester
J. H. McClain.....	Spartanburg
F. B. McCoy.....	Charleston
J. McCrady.....	Charleston

J. A. McKeown	Chester
C. McLaurin	Marlboro
F. B. McLaurin	Marlboro
W. F. Nettles	Clarendon
W. M. O'Bryan	Williamsburg
S. H. Parks	Greenville
W. T. Parrott	Oconee
H. A. Phelps	Sumter
J. V. Phillips	Cherokee
R. S. Pinckney	Dorchester
E. R. Plowden	Clarendon
C. K. Pollitzer	Beaufort
W. A. Putnam	Laurens
W. J. Quattlebaum	Saluda
W. M. Radcliffe	Richland
J. A. Ramey	Abbeville
J. W. Rasor	Abbeville
J. J. Rauch	Saluda
W. M. Raysor	Bamberg
M. E. Redick	Darlington
J. H. Reid	Anderson
S. F. Reid	Abbeville
R. L. Riggs	Charleston
K. O. Rinehart	Saluda
A. W. Robinson	Orangeburg
W. R. Sammons	Richland
W. A. Sanders	Anderson
M. A. Savage	Colleton
F. B. Schirmer	Charleston
O. H. Schumacher, Jr.	Oconee
H. W. Schumpert	Newberry
J. A. Simmons	Laurens
H. P. Sitton	Anderson
J. C. Sitton	Anderson
L. S. Sitton	Anderson

W. R. Smith	Charleston
Oscar Smoak	Orangeburg
L. G. Southard	Union
*P. J. Steele	Chester
A. W. Stepp	Anderson
T. E. Stokes	Darlington
H. P. Stuckey	Darlington
J. C. Summers	Orangeburg
B. L. Swygert	Lexington
F. E. Thomas, Jr.	Sumter
W. H. Thomas	Greenville
W. C. Thompson	Anderson
W. D. Trantham, Jr.	Kershaw
J. E. Traxler	Florence
F. J. Turner	Bamberg
E. M. Walker	Edgefield
L. C. Wanamaker	Orangeburg
S. L. Webb	Charleston
O. R. Wells	Chester
W. P. White	Beaufort
A. N. Whiteside	Chester
R. M. Wikle	Georgia
P. E. Wilbur	Charleston
T. H. J. Williams, Jr.	Charleston
J. E. Williamson	Sumter
W. E. Willimon	Greenville
C. D. Wilson	Greenville
W. C. Winn	Abbeville
R. Y. Winters	Darlington
T. H. Winters	Darlington
C. E. Woodham	Darlington
J. N. Wright	Laurens
J. A. Zimmerman	Oconee

*Died March 8, 1903.

S. R. Zimmerman	Greenville
W. S. Zimmerman	Spartanburg

Irregular Students

W. J. Austin	Abbeville
J. S. B. Baskin	Clarendon
S. L. Blair	York
J. W. Bradberry	Anderson
J. E. Clark	Chesterfield
J. O. Enecks	Georgia
W. R. Enecks	Georgia
R. E. Epting	Newberry
W. W. Fellers	Newberry
R. A. Gandy	Darlington
B. Genoble	Spartanburg
J. L. Gossett	Spartanburg
W. F. Gossett	Spartanburg
H. F. Hunsucker	Marlboro
T. E. Keitt	Newberry
A. Keller	Greenwood
J. R. London, Jr.	York
L. L. McDonald	Florence
S. Paul.	Beaufort
H. E. Phillips	Barnwell
J. C. Schrimp	Anderson
Joseph Sherard	Anderson
C. V. Sitton	Anderson
C. E. Smith	Georgia
E. E. Ware	Greenville
Albert Yates	Charleston

Preparatory Class

J. F. Arthur	Kershaw
R. W. Beaty	Union
C. W. Best	North Carolina
T. W. Blease	Saluda

F. F. Bolt	Anderson
S. A. Boozer	Newberry
H. D. Boykin	Kershaw
James Brinkley	Georgetown
F. W. Brock	Anderson
B. C. Brown	York
W. E. Campbell, Jr.	Beaufort
M. M. Carter	Darlington
R. F. Cason	Anderson
H. S. Chapman	Lexington
J. F. Claffy	Orangeburg
W. C. Clinkscales	Anderson
H. L. Cogburn	Edgefield
P. L. Cogburn	Edgefield
J. D. Connor, Jr.	Colleton
W. C. Cromer	Greenwood
R. E. Dalton	Greenville
G. W. Dorman	Spartanburg
J. J. Dorn	Greenwood
W. K. R. DuBose	Darlington
J. A. Duffie	Oconee
D. J. Dunlop	Williamsburg
H. M. Dunn	Abbeville
C. E. Durant	Colleton
H. B. Ellis	Abbeville
J. S. Elrod	Anderson
R. T. Farley	Laurens
R. F. Fraser	Georgetown
F. M. Furtick	Lexington
W. A. Gantt	Aiken
F. D. Griffin	Greenville
G. W. Gyles	Barnwell
W. F. Hartzog	Greenwood
B. C. Hester	Abbeville
W. L. Holmes	Laurens

W. H. L. Homesley	York
S. W. Hook	Richland
A. V. Hooks	Horry
L. A. Hutson	Orangeburg
Alva Jones	Saluda
G. F. Kaigler	Lexington
M. F. Kennedy, Jr.	Charleston
E. H. Kinsler	Richland
W. J. Lanham	Edgefield
S. L. Lebby	Charleston
J. B. Marshall	Greenville
N. E. Meetze	Lexington
B. W. Miller	Barnwell
G. W. Miller	Edgefield
H. C. Miller	Pickens
J. H. Moseley	Kershaw
A. B. Murchison	Kershaw
V. McBee	Greenville
E. O. McCreight	Kershaw
E. E. McDowell	Spartanburg
B. K. McInnes	Charleston
C. A. McLendon	Darlington
J. W. McLendon	Florence
J. H. McLeskey	Anderson
R. E. Nickles	Abbeville
P. B. O'Neal	Anderson
J. M. Pauling	Orangeburg
S. M. Pennel	Abbeville
T. Pennel	Abbeville
J. H. Porter	Beaufort
E. S. Prevost	Anderson
B. G. Pringle	Charleston
C. B. Pruitt	Anderson
R. A. Reid	Aiken
L. F. Rhame	Richland

T. M. Rogers	Marlboro
T. M. Scott	Aiken
W. O. Scott	Edgefield
M. T. Scruggs	Fairfield
J. W. Shealey	Lexington
C. F. Simmons	Greenwood
J. B. Smith	Marion
F. B. Spear	Georgia
W. H. Stevens	Greenville
J. M. Stokes	Darlington
W. L. Stone	Colleton
B. E. Strode	Oconee
C. P. Sullivan	Anderson
J. S. Taylor	Oconee
R. T. Taylor	Anderson
G. S. Turner	Cherokee
H. M. Turner	Laurens
J. L. Wadsworth	Darlington
D. V. Walker, Jr.	Fairfield
J. L. Walker	Clarendon
G. L. Warr	Darlington
T. J. Watson	Greenville
W. W. Webb	Anderson
L. S. White	Saluda
C. L. Williamson, Jr.	Sumter
E. F. Woodward	Barnwell
M. A. Woods	Clarendon
W. E. Wright	Greenville

Summaries

By Classes

Postgraduates	5
Seniors	66
Juniors	61
Sophomores	105
Freshmen	174
Preparatory	102
Irregular	26
Total	539

By States

South Carolina	523
Georgia	9
North Carolina	6
Virginia	1

By Counties in South Carolina

Abbeville	32
Aiken	6
Anderson	53
Bamberg	6
Barnwell	13
Beaufort	10
Berkeley	6
Charleston	45
Chester	10
Chesterfield	5
Cherokee	13
Clarendon	9
Colleton	10
Darlington	23
Dorchester	3

Edgefield.. . . .	10
Fairfield.. . . .	13
Florence.. . . .	10
Georgetown.. . . .	8
Greenville.. . . .	19
Greenwood.. . . .	14
Hampton	1
Horry.. . . .	4
Kershaw	9
Lancaster.. . . .	1
Laurens.. . . .	10
Lee.. . . .	1
Lexington.. . . .	17
Marion...	4
Marlboro.. . . .	8
Newberry.. . . .	12
Oconee.. . . .	18
Orangeburg.. . . .	26
Pickens.. . . .	11
Richland.. . . .	17
Saluda.. . . .	10
Spartanburg.. . . .	20
Sumter.. . . .	15
Union.. . . .	3
Williamsburg.. . . .	7
York.. . . .	11
Total, South Carolina.....	523

Regimental Organization

April 1, 1903

For instruction in infantry, and, to a slight degree, in light artillery tactics, and for the purpose of discipline, the cadets are organized into seven companies of infantry and one company of artillery.

The infantry is divided into two battalions—one of four companies and one of three companies—each battalion being under the immediate command of a Cadet Major. The artillery being a separate organization, commanded by a Cadet Captain.

The officers and non-commissioned officers are chosen from those who have shown themselves the most efficient in their general department and military duties. The officers from the Senior Class, and in general the Sergeants from the Junior Class, and Corporals from the Sophomore Class.

The figures indicate the relative rank in the several grades. The first seven ranking Sergeants being classed as Company Quartermaster Sergeants.

Commandant Cadets

FIRST LIEUTENANT EDGAR A. SIRMAYER,
THIRD U. S. CAVALRY

Regimental Staff

T. S. Perrin.....*Capt. and Adjutant*
T. B. Young.....*Capt. and Quartermaster*

Non-Commissioned Staff

F. T. Hamlin.....*Sergeant Major*
J. P. Tarbox.....*Quartermaster Sergeant*
C. Y. Reamer.....*Color Sergeant*

First Battalion

MAJOR J. C. WYLIE

*Adjutant*J. L. Bradford²*Sergeant Major*J. R. Connor²

COMPANY A

COMPANY B

COMPANY C

*Captains*E. D. Ellis⁷J. P. Glenn⁴C. B. Hagood⁵*Lieutenants*F. K. Rhodes⁶C. W. McSwain⁴F. K. Norris²J. F. Prioleau¹²J. P. Cummings¹⁰L. W. Fox³*First Sergeants*A. M. Henry¹V. B. Hall³L. Lipscomb⁷*Sergeants*R. E. Miller³W. F. Mauldin⁴W. P. Walker⁵I. H. Morehead⁸A. E. Holman¹⁰S. O. O'Bryan¹²W. S. Beaty²²S. J. Faris¹¹M. Bell²⁴S. C. Dean²⁹L. E. Boykin²⁵C. P. Ballenger²⁶*Corporals*C. P. Josey¹⁴T. R. Ellison²B. O. Kennedy⁵L. S. Wood¹⁵R. M. Watson¹²J. W. Ruff⁹W. H. Wyse²⁷R. L. Link²⁰R. P. Evans¹⁸H. W. Barre³⁰H. G. Bryan²²J. M. Jenkins²¹T. H. J. Williams³³C. Hanvey³⁴M. S. Reeves²⁴

COMPANY D

*Captain*W. H. Barnwell³*Lieutenants*J. T. Robertson¹H. C. Sahlmann¹³

*First Sergeant*J. A. Wier⁵*Sergeants*F. W. Lachicotte⁷H. W. Matthews²⁰H. W. Crouch¹³S. Ford²¹*Corporals*C. R. Robinson¹B. F. Lee¹⁴W. S. Weston¹³M. C. Shirley²⁹*Second Battalion*MAJOR C. W. LEGERTON²*Adjutant*H. C. Tillman¹*Sergeant Major*J. R. Siau¹

COMPANY E

COMPANY F

COMPANY G

*Captains*T. S. Gandy²P. J. Quattlebaum⁸T. M. Harvey⁶*Lieutenants*N. H. Alford⁹V. Livingston⁵D. E. Earle⁸G. L. Morrison¹⁶W. O. Cain⁷B. Freeman¹⁵*First Sergeants*J. C. Norton⁶W. L. Templeton²V. M. Williams⁴*Sergeants*S. G. Bryan⁶G. T. McGregor¹P. L. Elias²H. M. Manigault⁹G. L. Preacher¹⁸W. M. McWhorter⁴E. F. Brown¹⁵V. Baker¹⁹V. C. Platt¹⁶J. M. Hill¹⁷A. M. Williams²⁷A. J. Speer²³A. L. Matthews²³

Corporals

T. K. Elliott ³	E. H. Jones ⁶	G. B. Holland ⁴
A. A. Gandy ¹⁷	J. H. Rodger ⁷	J. G. Parks ¹¹
M. B. Booth ²⁶	F. R. Sweeny ¹⁰	C. J. Lemmon ²⁸
J. C. Goggans ³¹	E. R. McIver ¹⁶	
	J. B. Moseley ²⁵	

*Artillery Company**Captain*

W. E. G. Black¹

Lieutenants

B. H. Gardener¹¹ W. M. Wightman¹⁴

First Sergeant

H. N. McCrary

Sergeants

E. R. Finger W. D. Garrison
D. H. Sadler

Corporals

H. R. Pollitzer D. G. Lewis
J. C. Cullum H. W. Marvin

Cadet Band

The band is a part of the military department and is, therefore, under the immediate control of the Commandant. The cadets who are detailed to the band are required by the regulations of the College to practice one hour each day under the direction of the band master. The organization of the band for the session 1902-1903 is as follows:

B. H. Rawl, *Director*

J. E. Harrall, *Drum Major*
C. E. Boineau, *Solo Cornet*
L. P. Slattery, *Solo Cornet*
J. Maxwell, *Solo Clarinet*
W. B. Chisolm, *Second Clarinet*
C. Webb, *Second Cornet*
J. L. Caldwell, *Third Cornet*
J. W. Von Hasselen, *Baritone*
F. H. Cunningham, *First Trombone*
J. M. Pauling, *Second Trombone*
J. G. Cunningham, *Bass*
C. F. Simmons, *Bass*
A. A. Merrick, *First Tenor*
S. J. Dendy, *Second Tenor*
R. G. Williams, *Solo Alto*
E. P. Crouch, *Second Alto*
J. E. Traxler, *Third Alto*
W. H. L. Homsley, *Snare Drum*
W. D. Drew, *Bass Drum*
J. A. Simmons, *Cymbals*

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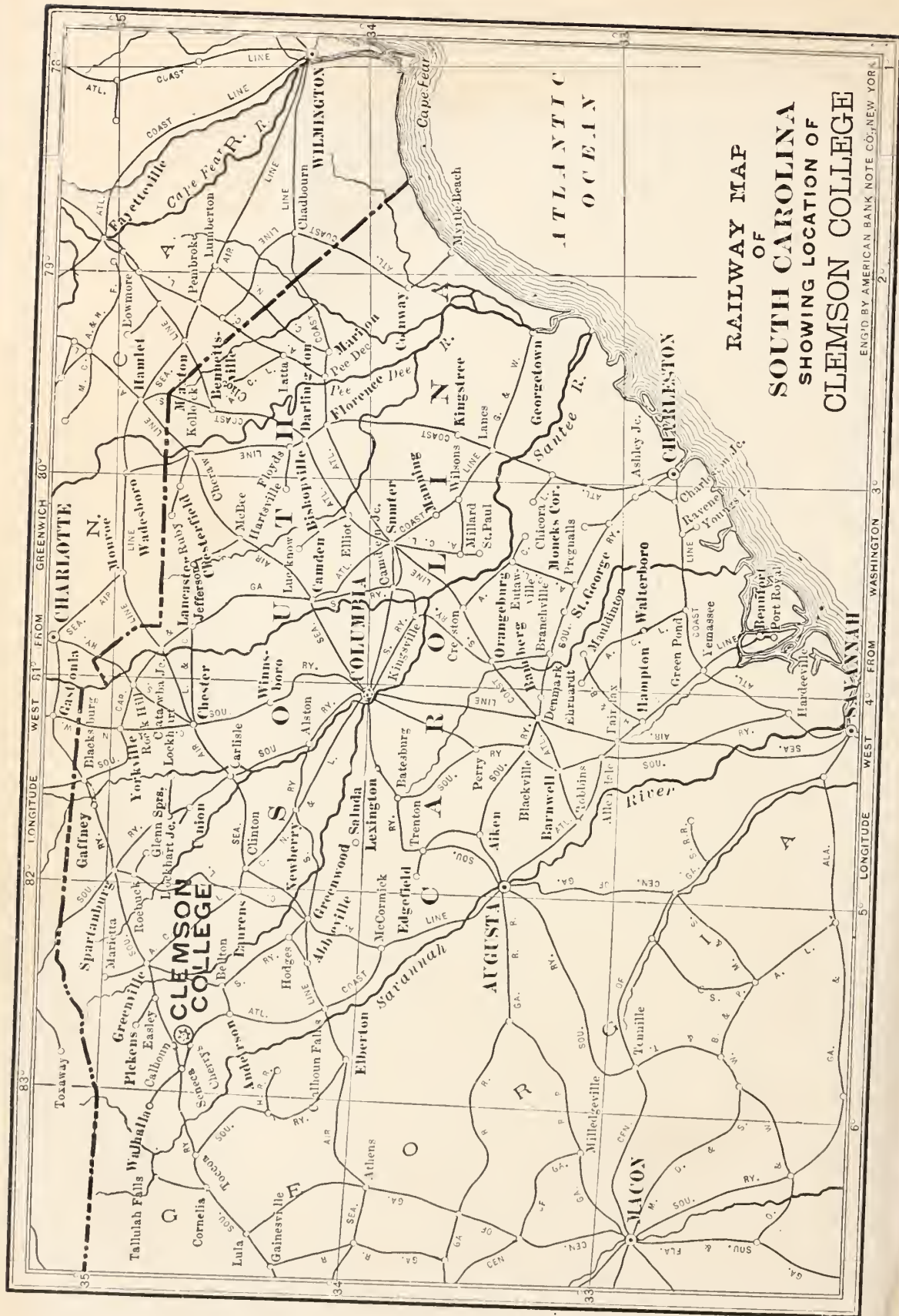
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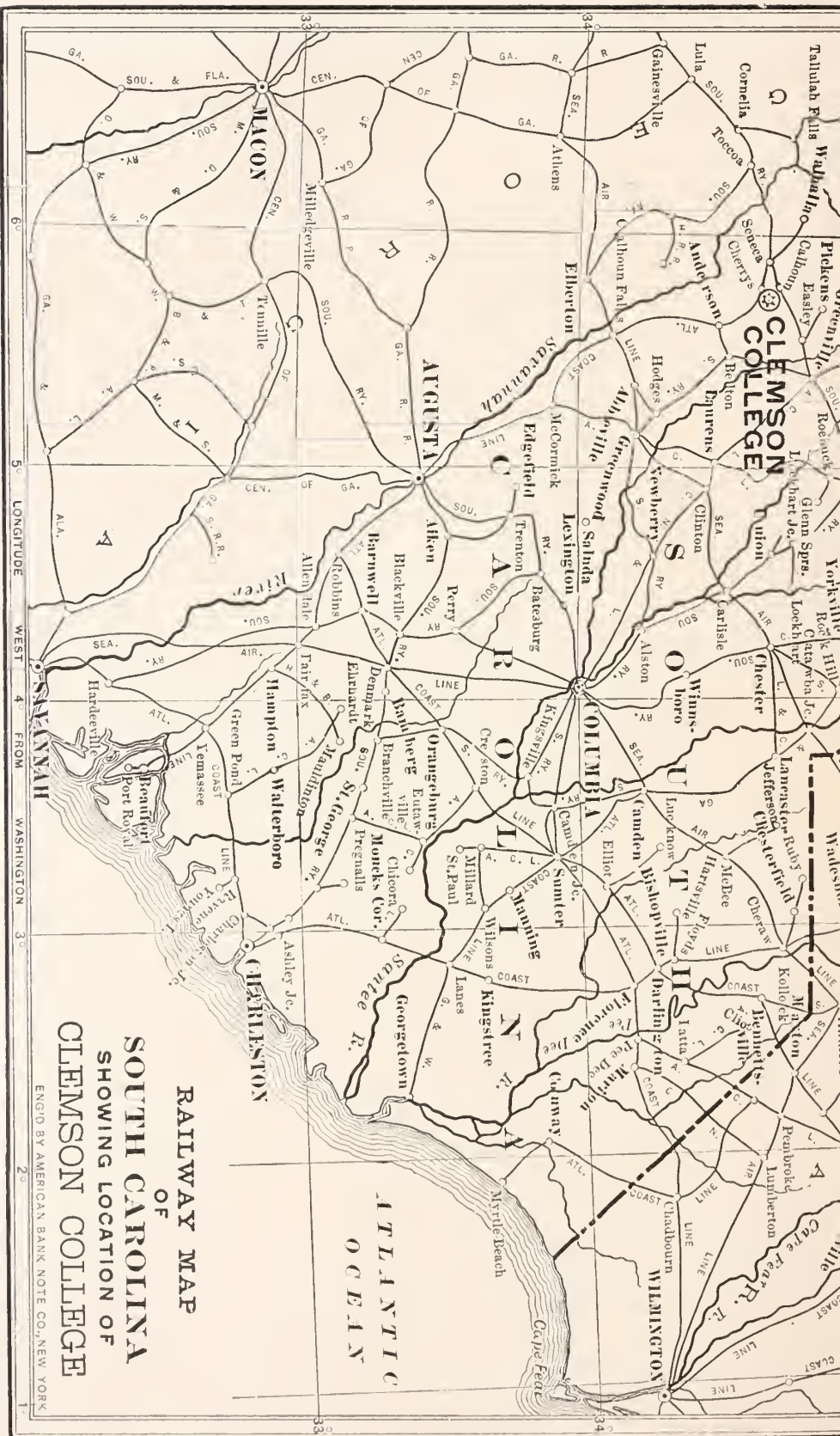
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RAILWAY MAP OF SOUTH CAROLINA SHOWING LOCATION OF CLEMSON COLLEGE

ENG'D BY AMERICAN BANK NOTE CO., NEW YORK





RAILWAY MAP
OF
SOUTH CAROLINA
SHOWING LOCATION OF
CLEMSON COLLEGE

ENG'D BY AMERICAN BANK NOTE CO., NEW YORK

CATALOGUE
OF THE
CLEMSON
AGRICULTURAL COLLEGE
OF SOUTH CAROLINA

STATE AGRICULTURAL AND MECHANICAL COLLEGE

POST-OFFICE: CLEMSON COLLEGE
TELEGRAPH, EXPRESS AND FREIGHT OFFICES: CALHOUN

1903-1904
ELEVENTH YEAR

ANNOUNCEMENTS 1904-1905

Columbia, S. C.
THE R. L. BRYAN COMPANY
1904

1904

JULY							SEPTEMBER							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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3	4	5	6	7	8	9	4	5	6	7	8	9	10	6	7	8	9	10	11	12
10	11	12	13	14	15	16	11	12	13	14	15	16	17	13	14	15	16	17	18	19
17	18	19	20	21	22	23	18	19	20	21	22	23	24	20	21	22	23	24	25	26
24	25	26	27	28	29	30	25	26	27	28	29	30	...	27	28	29	30	...	...	...
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

AUGUST							OCTOBER							DECEMBER						
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7	8	9	10	11	12	13	2	3	4	5	6	7	8	4	5	6	7	8	9	10
14	15	16	17	18	19	20	9	10	11	12	13	14	15	11	12	13	14	15	16	17
21	22	23	24	25	26	27	16	17	18	19	20	21	22	18	19	20	21	22	23	24
28	29	30	31	...	...	...	23	24	25	26	27	28	29	25	26	27	28	29	30	31
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1905

JANUARY							MARCH							MAY						
1	2	3	4	5	6	7	...	...	...	1	2	3	4	...	1	2	3	4	5	6
8	9	10	11	12	13	14	5	6	7	8	9	10	11	7	8	9	10	11	12	13
15	16	17	18	19	20	21	12	13	14	15	16	17	18	14	15	16	17	18	19	20
22	23	24	25	26	27	28	19	20	21	22	23	24	25	21	22	23	24	25	26	27
29	30	31	...	...	...	...	26	27	28	29	30	31	...	28	29	30	31	...	...	...

FEBRUARY							APRIL							JUNE						
...	...	...	1	2	3	4	...	...	...	...	...	...	1	...	...	...	...	1	2	3
5	6	7	8	9	10	11	2	3	4	5	6	7	8	4	5	6	7	8	9	10
12	13	14	15	16	17	18	9	10	11	12	13	14	15	11	12	13	14	15	16	17
19	20	21	22	23	24	25	16	17	18	19	20	21	22	18	19	20	21	22	23	24
26	27	28	...	...	...	...	23	24	25	26	27	28	29	25	26	27	28	29	30	...
...	...	...	...	...	...	...	30	...	...	...	...	...	...	...	...	...	...	...	...	...

College Calendar

Session 1904-1905

1904

- Aug. 9-12. State Farmers' Institute, at the College
Sept. 8-13. Examinations for admission and for removal of conditions
Sept. 14. Opening of the 12th session; exercises begin at 8.40 A. M.
Nov. 24. Thanksgiving day: a holiday
Dec. 23. First day of Christmas recess
-

1905

- Jan. 3. Beginning of the second term, 8.40 A. M.
Jan. 19. Lee's birthday: annual public exercises of the Columbian
literary society in the evening
Feb. 22. Washington's birthday: a holiday
Annual public exercises of the Palmetto literary society
in the evening
Feb. 28. Stated meeting of the Board of Trustees
Mar. 18. Calhoun's birthday: annual public exercises of the Cal-
houn literary society in the evening
-

1905

- Mar. 20. Beginning of the third term, 8.40 A. M.
May 1. A holiday; annual track and field athletic contests
June 4. Beginning of commencement exercises; baccalaureate
sermon
June 5. Address of alumni orator
Contest of literary society representatives
Military exercises and graduation parade
Stated meeting of the Board of Trustees
June 6. Commencement day; address to the graduating class
Graduating exercises; delivery of diplomas
-

Reports to Parents

Reports of class-standing and discipline will be sent to parents for periods ending on the following dates:

Oct. 14, Nov. 11, and Dec. 15,* 1904; Feb. 3, Mar. 10,* Apr. 21, and May 26,* 1905. Dates marked with an asterisk (*) are approximate, depending upon the beginning of the respective term examinations.

Quarterly Dues

Payable Sept. 14, Nov. 16, 1904; Jan. 30, Apr. 4, 1905.

Board of Trustees

Life Members

HON. R. W. SIMPSON, President.. . . .Pendleton, Anderson Co.
 SENATOR B. R. TILLMAN.....Trenton, Edgefield Co.
 HON. R. E. BOWEN.....Briggs, Pickens Co.
 HON. D. K. NORRIS.....Cateechee, Anderson Co.
 HON. J. E. BRADLEY.....Troy, Abbeville Co.
 HON. M. L. DONALDSON.....Greenville, Greenville Co.
 HON. J. E. WANNAMAKER.....St. Matthews, Orangeburg Co.

Term Expires 1906

HON. W. D. EVANS.....Cheraw, Marlboro Co.
 HON. A. T. SMYTHE.....Charleston, Charleston Co.
 HON. L. A. SEASE.....Prosperity, Newberry Co.

Term Expires 1908

HON. J. E. TINDAL.....Felder, Clarendon Co.
 HON. JESSE H. HARDIN.....Chester, Chester Co.
 HON. G. DUNCAN BELLINGER.. . . .Columbia, Richland Co.

Standing Committees of the Board

Executive Committee

Messrs. Norris, Tindal, Donaldson, Bowen, Bradley

Finance Committee

Messrs. Simpson, Smythe, Donaldson

Committee on Fertilizer Control

Messrs. Tindal, Wannamaker, Evans

Experiment Station Committee

Messrs. Tindal, Tillman, Wannamaker, Donaldson, Smythe

Farmers' Institute Committee

Messrs. Simpson, Sease, Donaldson, Evans, Tillman

Entomological Inspection Committee

Messrs. Donaldson, Sease, Wannamaker

Veterinary Inspection Committee

Messrs. Norris, Evans, Bowen

Dairy and Herd Committee

Messrs. Tillman, Smythe, Tindal

Committee on Coast Experiments

Messrs. Smythe, Wannamaker

Board of Visitors for the Session of 1904-1905

FIRST DISTRICT—Hon. W. G. Hinson, James Island

SECOND DISTRICT—Hon. J. C. Sheppard, Edgefield

THIRD DISTRICT—Hon. J. R. Vandiver, Anderson

FOURTH DISTRICT—Hon. D. E. Hydrick, Spartanburg

FIFTH DISTRICT—Hon. J. L. Glenn, Chester

SIXTH DISTRICT—Hon. J. H. Hudson, Bennettsville

SEVENTH DISTRICT—Hon. F. D. Bates, Orangeburg

Faculty*

PATRICK HUES MELL, M. E., Ph. D.
President

Agricultural Department

JAMES STANLEY NEWMAN
Director of Department
Professor of Agriculture

JOSEPH VOLNEY LEWIS, B. E., S. B.
Professor of Geology and Mineralogy

FRED HARVEY HALL CALHOUN, Ph. D.**
Professor of Geology and Mineralogy

GEORGE EDWARD NESOM, B. Sc., D. V. M.
Associate Professor of Veterinary Science

CHARLES CARTER NEWMAN
Associate Professor of Horticulture

CHARLES EDWARD CHAMBLISS, B. S., M. S.
Associate Professor of Zoology and Entomology

HAVEN METCALF, A. M., Ph. D.
Associate Professor of Botany and Bacteriology

HARMON BENTON, B. S., M. S.
Assistant Professor of Agriculture

Assistant Professor of Animal Husbandry and Dairying

ALONZO SHECK SHEALY, B. S., D. V. M.
Assistant in Veterinary Science

BERNARD HAZELIUS RAWL, B. S.
Assistant in Animal Husbandry and Dairying

*The names of the Faculty, after that of the President, are arranged in groups in each department: Professors, Associate Professors, Assistant Professors, and Instructors, in the order of their respective appointments.

**To begin with session 1904-1905, in place of Professor Lewis, resigned.

Mechanical and Electrical Department

WALTER MERRITT RIGGS, E. M. E.

Director of Department

Professor of Mechanical and Electrical Engineering

THOMAS GRAYSON POATS

Associate Professor of Physics

RUDOLPH EDWARD LEE, B. S.

Associate Professor of Drawing

SAMUEL BROADUS EARLE, M. A., M. E.

Associate Professor of Mechanical Engineering

HENRY HEARST KYSER, E. M. E.

Assistant Professor of Electricity

WILLS JOHNSON*

Assistant Professor of Forge and Foundry

CALVIN SHELOR WRIGHT, B. S., M. E.

Assistant Professor of Machine-work

JOHN HILLIARD HOOK, B. S.

Assistant Professor of Wood-work

WILLISTON WIGHTMAN KLUGH, B. S.

Assistant Professor of Drawing

CLIFFORD BURNHAM GRISWOLD, B. S.**

Assistant Professor of Forge and Foundry

FRANK TOWNES DARGAN, M. S.

Instructor in Drawing

JOHN WEEMS GANTT

Assistant in Wood-work

*Absent on leave during the session of 1903-1904.

**In the place of Professor Johnson for the session of 1903-1904.

Department of Chemistry

MARK BERNARD HARDIN

Director of Department

Professor of Chemistry

RICHARD NEWMAN BRACKETT, A. B., Ph. D.

Associate Professor of Chemistry

FRANK SCOTT SHIVER, Ph. G.

Assistant Professor of Agricultural Analysis

DAVID HILL HENRY, B. S.

Instructor in Chemistry

Department of Textile Industry

J. H. MEANS BEATY

Director of Department

Professor of Textile Industry

FREDERICK DANIEL FRISSELL

Associate Professor of Weaving and Designing

JOSEPH HIDY JAMES, Ph. D.

Assistant Professor of Textile Chemistry and Dyeing

BARTHOLOMEW MOORE PARKER, B. S.

Instructor in Textile Industry

Academic Department

CHARLES MANNING FURMAN, A. B.

Professor of English

WILLIAM SHANNON MORRISON, A. B.

Professor of History and Political Economy

PAUL THOMAS BRODIE, B. S., A. B.

Professor of Mathematics and Civil Engineering

JOHN SHERWOOD McLUCAS, A. M.

Assistant Professor of English

CLEMSON COLLEGE

DAVID WISTAR DANIEL, M. A.
Assistant Professor of English

SAMUEL MANER MARTIN
Assistant Professor of Mathematics

SAMUEL WATSON REAVES, B. S., A. B.
Assistant Professor of Mathematics

AUGUSTUS SHANKLIN, B. S.
Registrar and Secretary of the Faculty.
Assistant Professor of Mathematics

THOMAS WADLINGTON KEITT
Assistant Professor of English

ARTHUR BUIST BRYAN, B. S., B. Litt.
Assistant Professor of English

HALE HOUSTON, C. E.
Assistant Professor of Applied Mathematics in Civil Engineering

Military Department

EDGAR ALEXANDER SIRMYER
Captain 8th Cavalry U. S. Army, Commandant of Cadets
Professor of Military Science and Tactics

Preparatory Department

MARK EDWARD BRADLEY, A. B.
Instructor in English, History, and Geography

JOSEPH EVERETTE HUNTER, B. S.
Instructor in Mathematics

The following members of the Collegiate Faculty also instruct the Preparatory Class in the subjects indicated:

PROFESSOR MORRISON, History
PROFESSOR LEWIS, Geography
ASSISTANT PROFESSOR KEITT, English
ASSISTANT PROFESSOR BRYAN, English

Standing Committees of the Faculty

The President is *ex officio* a member of each committee.
The first named in each instance is chairman.

Discipline Committee

President Mell, Professors Hardin, Furman, Morrison, Lewis, Newman, Beaty, Brodie, Riggs, Sirmyer

Committee on Examinations

Professors Brodie, Furman, Morrison, Lewis, Riggs

Schedule Committee

Professors Morrison, Brackett, Furman, Riggs, Lee, Reaves, Nesom, James

Library Committee

Professors McLucas, Chambliss, Bryan, Beaty, Metcalf

Committee on Preparatory Department

Professors Furman, Morrison, Brodie, Lewis

Committee on Irregular Students

Professors Chambliss, Lee, Benton, Reaves, Wright

Committee on Chapel Services

Professors Poats, Shiver, Lee, Keitt, Frissell

Committee on Chapel Music

Professors Lewis, Riggs, Sirmyer, Hook, Bryan, Mr. Rawl

Committee on Lectures and Entertainments

Professors Daniel, Martin, Kyser, Klugh, Houston

Committee on Popular Science Bulletins

Professors Metcalf, Benton, Chambliss, James, Daniel

Committee on Alumni

Professors Shanklin, Lee, Mr. Henry

Committee on Athletics

Professors Riggs, Kyser, McLucas, Daniel, Lewis, Shanklin

Catalogue Committee

Professors Lewis, Earle, Brackett, James, Houston, Sirmyer

Officers of the College

PATRICK HUES MELL, M. E., Ph. D.

President

EDGAR ALEXANDER SIRMAYER, Capt. 8th Cavalry, U. S. Army

Commandant

ALEXANDER MAY REDFEARN, B. S., M. D.

Surgeon

AUGUSTUS SHANKLIN

Registrar and Secretary of Faculty

PAUL HAMILTON EARLE SLOAN, M. D.

Treasurer and Secretary Board of Trustees

HUGH MILTON STACKHOUSE

Secretary Board of Fertilizer Control

GEORGE EDWARD TAYLOR

Bookkeeper

MISS SUSAN HALL SLOAN

Librarian

MISS MINNIE BATES WANNAMAKER*

Secretary to the President

MISS MARIA WIGHTMAN CAPERS**

Secretary to the President

JOHN NATHAN HOOK

Justice Clemson College Corporation

JAMES PERCIVAL LEWIS

Superintendent of College Farm

AUGUST SCHILLETTER

Steward

Board of Health

President MELL, Doctors REDFEARN and SLOAN, Professors
HARDIN and NEWMAN

*Absent on leave during second half of session 1903-1904.

**In place of Miss Wannamaker during second half of session
1903-1904.

Regimental Organization

FEBRUARY 28TH, 1904

Commandant Cadets

CAPT. EDGAR A. SIRMAYER,
EIGHTH U. S. CAVALRY

Regimental Staff

J. R. Connor¹.....*Capt. and Adjutant*
J. P. Tarbox².....*Capt. and Quartermaster*

Non-Commissioned Staff

B. O. Kennedy¹.....*Sergeant Major*
A. J. Speer¹.....*Quartermaster Sergeant*
L. E. Boykin¹.....*Color Sergeant*

Artillery

S. G. Bryan³.....*Captain*
W. P. Walker¹².....*Lieutenant*

First Battalion

MAJOR F. T. HAMLIN¹

Adjutant

S. T. Hill¹

Sergeant Major

W. T. Brock²

COMPANY "A"

COMPANY "B"

COMPANY "C"

Captains

C. Y. Reamer⁹

L. Lipscomb⁴

R. E. Miller¹

Lieutenants

J. F. Williams¹

H. W. Matthews¹¹

V. C. Platt⁸

T. N. Lide¹⁷

E. A. Thornwell¹⁵

H. S. White¹⁴

First Sergeants

J. G. Parks⁸

R. L. Link⁶

F. M. Routh⁷

Sergeants

M. L. Murph ¹⁰	J. B. Moseley ³	C. J. Lemmon ²
W. S. Weston ¹³	M. B. Sams ¹⁶	C. H. Newman ¹²
W. H. Wise ¹⁵	D. B. Swygert ¹⁷	A. G. Ellison ²⁸
W. A. C. DeLorme ²⁹	O. L. Derrick ²³	W. C. Wilbur ³¹

Corporals

M. A. Savage ²	C. F. Elliott ¹⁰	B. H. Martin ³
T. B. Caldwell ²⁴	C. Coles ¹⁷	A. R. McAliley ¹⁶
J. McCrady ²⁵	J. A. Gelzer ¹⁸	J. A. McKeown ²¹
W. R. Sammons ²⁶	J. A. Brice ²⁰	W. M. O'Bryan ²⁷
D. G. Adams ²⁸	J. H. McClain ²⁵	J. A. Killian ⁴¹
	R. D. Graham ⁴⁵	H. P. Stuckey ⁴⁴

COMPANY "D"

*Captain*A. E. Holman⁶*Lieutenants*W. M. McWhorter⁴ P. L. Elias⁶*First Sergeant*E. H. Jones²*Sergeants*

S. Sorentrue ¹⁴	L. R. Hoyt ²⁷
R. F. Gooding ¹⁸	J. E. Johnson ³²

Corporals

J. M. Moss ⁵	P. S. Cromer ³³
W. A. Beaty ¹⁹	T. L. Goodwin ⁴³
W. J. Latimer ³⁰	

Second Battalion

MAJOR V. M. WILLIAMS²*Adjutant*H. M. Managault²*Sergeant Major*E. R. McIver¹

COMPANY "E"

COMPANY "F"

COMPANY "G"

*Captains*J. A. Wier⁷M. A. Grace⁸A. M. Henry²*Lieutenants*C. Norton⁵G. L. Preacher⁷I. H. Morehead³W. F. Mauldin⁹S. J. Faris¹³S. Ford¹⁰*First Sergeants*J. M. Jenkins³C. P. Ballinger⁴J. L. Caldwell⁵*Sergeants*G. B. Holland⁶F. E. Cope⁷T. K. Elliott¹C. A. Grainger²⁵E. B. Dibble¹¹C. P. Josey⁸H. G. Bryan²⁶J. C. Goggans²⁰W. M. Mays²²T. F. Barton³⁰J. Brodie²¹I. W. Bull²⁴*Corporals*J. C. Summers¹J. C. Boesch⁶W. P. White¹³W. R. Smith⁷S. P. Harper⁸F. G. Alexander²⁹S. F. Reid²²S. L. Johnson¹²F. M. Dwight³¹T. E. Stokes³²A. N. Whiteside¹⁴S. L. Webb³⁴W. S. Baskin³⁷E. S. Hitch¹⁵A. M. Shealy³⁷W. A. Putnam⁴⁰H. W. Schumpert⁴³J. M. Mars⁴⁶

CLEMSON COLLEGE

COMPANY "H"

*Captain*V. Baker⁵*Lieutenants*E. F. Brown²O. M. Roberts¹⁶*First Sergeant*J. W. Ruff¹*Sergeants*E. E. Porter⁴C. E. Lathrop⁹B. F. Lee⁵J. C. Richardson¹⁹*Corporals*W. A. Sanders⁴J. A. Ramey³⁸W. D. Anderson⁹L. L. Harris³⁹J. V. Phillips¹¹

The figures indicate the relative rank in the several grades. The first seven ranking Sergeants being classed as Company Quartermaster Sergeants.

Cadet Band

B. H. RAWL, *Director*

H. W. Barre, *Drum Major*

J. Maxwell, *Solo B flat Clarinet, Chief Musician*

T. L. Bissell, *E flat Clarinet*

L. P. Slattery, *Solo Cornet, Band Sergeant*

C. Webb, *Solo Cornet*

W. H. L. Homesley, *Solo Cornet*

C. W. Busch, *1st Cornet*

K. M. James, *Solo Alto*

S. J. Dendy, *2d Alto*

J. B. Heyward, *3d Alto*

R. T. Graham, *1st Tenor*

A. S. Cutts, *2d Tenor*

J. M. Paulling, *Slide Trombone*

A. A. Merrick, *Baritone*

J. G. Holland, *Bass*

J. K. Simpson, *Bass*

T. A. Waters, *Snare Drum*

W. H. Wylie, Jr., *Snare Drum*

H. P. Sitton, *Bass Drum*

W. L. Schachte, *Cymbals*

Experiment Station Staff

P. H. MELL, M. E., Ph. D., *President of College, Director*
J. S. NEWMAN, *Vice-Director and Agriculturist*
M. B. HARDIN, *Chief Chemist*
G. E. NESOM, B. Sc., D. V. M., *Veterinarian*
C. C. NEWMAN, *Horticulturist*
C. E. CHAMBLISS, M. Sc., *Entomologist*
HAVEN METCALF, A. M., Ph. D., *Botanist and Bacteriologist*
———, *Animal Husbandry and Dairying*
R. N. BRACKETT, Ph. D., *Assistant Chemist*
F. S. SHIVER, Ph. G., *Assistant Chemist*
C. C. McDONNELL, B. S., *Assistant Chemist*
B. F. ROBERTSON, B. S., *Assistant Chemist*
D. H. HENRY, B. S., *Assistant Chemist*
H. BENTON, M. S., *Assistant Agriculturist*
———, *Assistant Chemist*
J. S. PICKETT, *Foreman*
B. H. RAWL, B. S., *Assistant Animal Husbandry and Dairying*
JOHN N. HOOK, *Secretary and Librarian*

State Chemist and Inspection Officers*

PROFESSOR M. B. HARDIN, *State Chemist*
DR. G. E. NESOM, *State Veterinarian*
PROFESSOR C. E. CHAMBLISS, *State Entomologist*

*Appointed by the Board of Trustees under the State laws requiring them to carry on the work indicated.

Ministers for Session of 1903-1904

Sept. 6.	Rev. K. G. Finlay.....	Clemson College, S. C.
Sept. 13.	Rev. John Johns, D. D.....	Rock Hill, S. C.
Sept. 20.	Rev. J. H. Thornwell, D. D.....	Fort Mill, S. C.
Sept. 27.	Rev. W. E. Thayer.....	Rock Hill, S. C.
Oct. 4.	Bishop W. W. Duncan, D. D.....	Spartanburg, S. C.
Oct. 11.	Rev. J. W. Magruder.....	Spartanburg, S. C.
Oct. 18.	Rev. Oliver Johnson.....	Leslie, S. C.
Oct. 25.	Rev. H. C. Buchholz.....	Abbeville, S. C.
Nov. 1.	Rev. W. R. Richardson, D. D.....	Spartanburg, S. C.
Nov. 8.	Rev. C. W. Boyd.....	Cheraw, S. C.
Nov. 15.	Rev. W. T. Hall, D. D.....	Columbia, S. C.
Nov. 22.	Rev. L. M. Roper, D. D.....	Spartanburg, S. C.
Nov. 29.	Rev. D. G. Phillips.....	Atlanta, Ga.
Dec. 6.	Rev. S. H. Zimmerman.....	Greenwood, S. C.
Dec. 13.	Rev. K. G. Finlay.....	Clemson College, S. C.
Dec. 20.	Rev. W. H. Greever.....	Columbia, S. C.
Jan. 10.	Rev. H. H. Covington.....	Sumter, S. C.
Jan. 17.	Rev. S. M. Smith, D. D.....	Columbia, S. C.
Jan. 24.	Rev. L. M. Roper, D. D.....	Spartanburg, S. C.
Jan. 31.	Rev. J. W. Walden, D. D.....	Atlanta, Ga.
Feb. 7.	Rev. J. W. Daniel, D. D.....	Charleston, S. C.
Feb. 14.	Rt. Rev. Ellison Capers, D. D.....	Columbia, S. C.
Feb. 21.	Rev. W. M. McPheeters, D. D.....	Columbia, S. C.
Feb. 28.	Rev. A. J. S. Thomas, D. D.....	Greenville, S. C.
Mar. 6.	Rev. Mark L. Carlisle, D. D.....	Columbia, S. C.
Mar. 13.	Rev. O. T. Porcher.....	Greenwood, S. C.
Mar. 20.	Rev. W. G. Neville.....	Yorkville, S. C.
Mar. 27.	Rev. J. I. Allen.....	Greenville, S. C.
Apr. 3.	Bishop W. A. Candler, D. D., LL. D.....	Atlanta, Ga.
Apr. 10.	Rev. A. R. Mitchell.....	Greenville, S. C.
Apr. 17.	Rev. H. A. White, D. D.....	Columbia, S. C.
Apr. 24.	Rev. J. B. Shelton.....	Chester, S. C.
May 1.	Rev. W. I. Herbert.....	Columbia, S. C.
May 15.	Rev. Robt. P. Pell, Lit. D.....	Spartanburg, S. C.
May 22.	Rev. D. M. Ramsey, D. D.....	Charleston, S. C.
May 29.	Rev. F. Y. Pressly, D. D.....	Due West, S. C.

June 5. Baccalaureate Sermon,

Rt. Rev. Theodore D. Bratton, D. D.....Jackson, Miss.

Alumni Organizations

Clemson College Alumni Association

J. S. GARRIS, '98, President, Spartanburg, S. C.
D. H. HENRY, '98, Vice-President, Clemson College, S. C.
A. B. BRYAN, '98, Secretary, Clemson College, S. C.
W. W. KLUGH, JR., '96, Cor. Sec., Clemson College, S. C.
R. E. LEE, '96, Treasurer, Clemson College, S. C.
J. E. CAUGHMAN, '00, Orator for 1904.

The New York Clemson Club, New York City

J. T. BOWEN, '96, President
W. J. SARRATT, '98, Vice-President
EDGAR M. MATTHEWS, '01, Secretary

The Washington Chapter of the Clemson College Alumni Association, Washington, D. C.

E. T. HUGHES, '01, President
M. E. ZEIGLER, '02, Vice-President
T. B. YOUNG, '03, Secretary
G. H. SWYGERT, '98, Treasurer

The Clemson Club of Charleston, Charleston, S. C.

C. M. FURMAN, JR., '96, President
W. E. GREGG BLACK, '03, Vice-President
W. D. GARRISON, '03, Secretary
E. BROCKMANN, '02, Treasurer

LOCATION AND HISTORICAL SKETCH
ADMISSION AND COURSES OF STUDY

Location

The College is located on the old Fort Hill homestead of John C. Calhoun, on the dividing line between Oconee and Pickens Counties, in the picturesque foot-hills of the Blue Ridge. It has an elevation of 900 feet above sea level, and commands an excellent view of the mountains to the north and west, some of which attain an altitude of nearly 5,000 feet. The climate is invigorating and healthful, and the surroundings are in every way favorable to the highest physical and mental development.

The College is one mile from Calhoun, a station on the main line of the Southern Railway, and two miles from Cherrys, on the Blue Ridge Railroad. By means of these roads and their connections, the College is easily accessible from all parts of the State. It is also connected by local telephone with neighboring towns in adjoining counties, and by telegraph and long distance telephone with all parts of the country. The post-office is conveniently situated on the campus, and receives five daily mails.

Historical Sketch

The College is the outcome of a movement for the establishment of an Agricultural College by a convention of farmers of the State in 1886. The first step toward the realization of this project was taken by the Hon. Thomas G. Clemson, who, upon his death in 1888, bequeathed to the State the old Fort Hill homestead, the former home of John C. Calhoun, and other securities to the value of \$58,539 "for the establishment of an Agricultural College." The estate included about 800 acres of land and the historic old Calhoun resi-

dence, which is now carefully preserved on the College campus. This bequest was accepted by the State Legislature in an Act which became a law in November, 1889.

The College was opened on the 6th day of July, 1893, and 446 students were enrolled during the first session. These were classified as sophomores, freshmen, and higher and lower preparatory. The Trustees having decided that sessions should begin on the third Thursday in February and end on the third Thursday in December, the first session was only about five and a half months long. On this account the students were continued in the same classes throughout the second session, February to December, 1894, and the enrollment increased to 635. On the night of May 22d, 1894, the Main building was burned, but the regular exercises were not interrupted, and the only summer vacation consisted of a week's encampment at Spartanburg in July.

During the third session, February to December, 1895, there were 370 students in attendance, with the former sophomores advanced to the junior class. There was a recess of two weeks in the latter part of July, and the session was closed on December 7th, instead of the third Thursday, on account of an outbreak of measles among the students. The enrollment during the fourth session, February to December, 1896, was 350, and the first commencement exercises were held on December 13th to 16th, 1896, with a graduating class of 37, 29 in the agricultural course and 8 in the mechanical-electrical. The fifth session opened in the regular way, on the third Thursday in February, 1897, but exercises were suspended on the 25th of June, on account of an epidemic of fever. At a meeting of the Trustees in July, it was decided to open the College again on the 14th of September, and that henceforth the sessions should begin regularly on the second Wednesday in September and close on the second Wednesday in June. The exercises of the second commencement, which



THE CALHOUN MANSION

would normally have occurred in December, 1897, were held on February 6th to 9th, 1898. The graduating class numbered 25, 13 in the agricultural course and 12 in the mechanical-electrical. The undergraduate classes were continued until June, and the total enrollment for this long session (February, 1897, to June, 1898), was 449. It will be observed that, owing to the change from winter to summer vacation, there was no class graduated in 1897.

Since 1898 the annual commencement exercises have been held regularly in June, although the closing day was afterward changed to first Tuesday, instead of second Wednesday. During the sixth session, 1898-1899, the enrollment was 446, and the graduating class numbered 16, 6 in the agricultural course, 6 in the mechanical-electrical, and 4 in the civil engineering. The textile department was first opened for students at the beginning of this session, in September, 1898. During the seventh session, 1899-1900, 461 students matriculated, and the class of 1900 numbered 28, including 12 in the agricultural course, 6 in the mechanical-electrical, 6 in the civil engineering, and 4 in the textile.

Beginning with the eighth session, 1900-1901, preparatory instruction was restricted to a one-year course, thus abolishing the lower preparatory class. Exercises were suspended on December 2d, 1900, until after the Christmas recess, on account of scarlet fever. During the session 483 students were enrolled, and the graduating class numbered 31, including 9 in the agricultural course, 11 in the mechanical-electrical, 2 in the civil engineering, and 9 in the textile. In the ninth session, 1901-1902, 500 students matriculated and 59 were graduated, including 12 in the agricultural course, 28 in the mechanical-electrical, 2 in the civil engineering, and 17 in the textile. The enrollment during the tenth session, 1902-1903, was 539, and the graduating class numbered 60,

including 6 in the agricultural course, 28 in the mechanical-electrical, 5 in the civil engineering, and 21 in the textile.

The total number of graduates to June, 1903, was 256.

Admission of Students

Every candidate for admission must be at least sixteen years of age.

Students desiring to enter the College should apply to the President for application blanks, and these, properly filled out, should be returned to the President as early in the summer as possible, and in no case later than August 15th.

Certificates of good moral character are required of all candidates not known to members of the Faculty; and if the candidate comes from another college, this certificate must show that he was honorably discharged.

In selecting students who shall be admitted to the College, subject to their passing the required examinations, the following rules, prescribed by the Board of Trustees, will govern:

1. Students must undergo a medical examination, and no student will be admitted who is not healthy and free from contagious diseases, including consumption.

2. Students will be apportioned among counties in proportion to representation in the House of Representatives, under the following rules and regulations:

- (a). Applicants prepared to enter College classes will have preference over those who enter only the preparatory class.

- (b). As between applicants of equal preparation, the oldest will have the preference.

- (c). Other things being equal, the first applicants will receive permission to enter.

- (d). When a county has not sent its quota, the places thus left shall be apportioned among the other applicants.

- (e). Applicants not entering within ten days after the

opening of the session will have their rights in the place given to applicants next on the roll.

Students upon arrival at the College at the opening of the session must report at once to the President's office and matriculate before they will be assigned to quarters in the barracks. No student will be admitted to any of the classes or examinations of the College before matriculation and payment of the fees. (See pages 51-53).

Matriculation is equivalent to a pledge to conform to the rules and regulations of the College.

Entrance Requirements

For admission into the freshman class a thorough knowledge is required of arithmetic, elementary algebra, English grammar, geography, and history of the United States.

Arithmetic.—The applicant is expected to have a thorough practical acquaintance with the ordinary principles and operations of arithmetic. Wentworth's Practical Arithmetic is recommended as a suitable text-book.

Algebra.—The detailed requirements are as follows: Definitions and notation, fundamental operations, including laws of signs, and the interpretation of negative results; use of parentheses; factoring; highest common factor; lowest common multiple; simple and complex fractions; simple integral and fractional equations with one unknown number, and problems leading to such equations; simultaneous equations of the first degree, with applications to solution of problems; involution of monomials and polynomials; evolution of monomials and polynomials; theory of exponents with applications; radicals, including solution of equations involving rationalization; simple operations with imaginary expres-

sions ; pure and affected quadratic equations containing one unknown number, with application to problems.

The student should cover carefully the whole ground here specified, and should acquire a clear understanding not only of algebraic processes but of the principles and reasons involved in every operation. Students fail on entrance examinations more frequently because of imperfect knowledge of the subject matter passed over, than because they have not gone far enough in the text-book.

A satisfactory treatment of the topics in Algebra may be found in Wentworth's New School Algebra (used in the public schools).

English.—Applicants are examined in spelling, sentence analysis, and oral reading ; and are required to write short essays on an assigned subject.

Geography.—Applicants must possess a fair knowledge of general geography, such as may be obtained from a proper study of Frye's Advanced, Maury's Manual, Tarr and McMurry's Complete Geography, or other standard text-book of equal grade. The following topics will be especially emphasized in the entrance examinations: Outlines and positions of the continents, and locations of the principal mountains, plateaus, river basins, and coastal lowlands ; influences of land forms and climate upon the life and industries of the inhabitants ; locations and outlines of important countries, particularly those of America and Europe, and of the States in the United States ; locations of great cities in all countries, and conditions favorable to the growth of cities.

History.—Eggleston's History of the United States and Its People is the text-book recommended. Any other school history may be used in place of the one named.

Entrance Examinations

Entrance examinations are held during the five days immediately preceding the opening of the session, September 8th to 13th, 1904, and all applicants for admission are expected to report promptly at the beginning of this period. Former students, also, who have conditions to remove or work to make up, are required to report at the same time.

There is no extra charge for board during this period.

Examinations on the subjects required for entrance will be held on the dates shown in the following schedules, beginning at 9 A. M.:

For Admission to the Fresman Class

Arithmetic, Thursday, September 8th, 1904.

Algebra, Friday, September 9th, 1904.

English, Saturday, September 10th, 1904.

Geography, Monday, September 12th, 1904.

History, Tuesday, September 13th, 1904.

For Admission to the Preparatory Class

Arithmetic, Saturday, September 10th, 1904.

English, Monday, September 12th, 1904.

Geography, Tuesday, September 13th, 1904.

Upon passing satisfactorily the required examinations, the Committee on Examinations furnishes the applicant with a certificate to that effect, and upon presentation of this certificate at the President's office he is assigned to the class recommended by the Committee.

For admission to advanced standing, applicants must be prepared to stand examinations on the subjects passed over by the lower classes, as indicated in the courses of study scheduled on the following pages. Such applicants should

report with other new students during the regular examination period, and arrange with their instructors for the necessary examinations before the opening of the session. Students admitted to advanced standing are allowed a reasonable length of time in which to make up shop work of the lower classes, in case they have not done equivalent work elsewhere.

Examinations for admission to the beneficiary scholarships established at the recent session of the legislature are held by the various county boards of education, and cannot be given at the College. For further particulars in regard to these scholarships, see page 53.

Prescribed Courses of Study

As briefly described and tabulated on the following pages, six regular four-year courses are offered, each leading to graduation with the degree of Bachelor of Science (B. S.), the course pursued being designated on the diploma.

The two agricultural courses are alike in the freshman year, and agricultural students are, therefore, required to choose between these at the beginning of the sophomore year. The other four courses are alike during the first two years, and choice between them is made at the beginning of the junior year. The descriptions accompanying the detailed schedules of studies in the various courses are intended to aid the student in arriving at an adequate estimate of the scope and purposes of each course, in order that he may the more intelligently choose between them.

In all the courses, two hours of practical work in shop, laboratory, or field, are regarded as equivalent to one hour of "theoretical" work, or recitations, as no outside preparation is required for practical work, and the exercises are completed in the periods assigned in the curriculum.

Change from one course to another is not permitted except

upon approval of the Faculty. Any student desiring to change his course of study must submit a written application to the President for such change within thirty days from the date of his matriculation for the current session. This application must be accompanied by the written permission of parent or guardian, unless the student is twenty-one years of age.

COURSE I.—AGRICULTURE

This is a broad educational course, covering the whole field of natural sciences that are tributary to the agricultural industry, together with a liberal amount of mathematics, English, physics, history and political economy, and a maximum amount of chemistry.

The division of the original course into (1) Agriculture and Horticulture, and (2) Agriculture and Animal Industry, described on the following page, has been made in order to afford opportunity for election in these lines. In this course the student is given more special training in agriculture, horticulture, chemistry, botany, bacteriology, and entomology; and thus is laid a foundation upon which he may readily specialize in any of these branches after graduation. The student is well equipped to take up farming, gardening, or fruit growing as an occupation, or for the pursuit of investigational work in the United States Department of Agriculture or the various state experiment stations.

Either of the agricultural courses forms an excellent foundation for the study of other professions, particularly that of medicine.

COURSE I.—AGRICULTURE

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Shop Work (240, 261).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (231).....	3	3	3
History (511, 512).....	3	3	3	Rural Architecture (233).....	3	3	3
Agriculture (100).....	2	2	—	Plant and Animal Life (170)...	3	3	—
Live Stock (150).....	—	—	2	Live Stock (151).....	—	—	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522).....	5	—	—	Veterinary Science (130).....	3	—	—
English (502).....	3	3	3	Botanical Lab. (171).....	2	1	1
Chemistry (300).....	3	3	3	Chemical Lab. (301).....	3	2	2
Physics (220).....	2	2	2	Surveying Field (530).....	—	2	2
Surveying (530).....	—	2	2	Physiological Lab. (140).....	—	2	2
Physiology (140).....	—	1	1	Agriculture (101).....	2	3	3
Agriculture (101).....	—	2	2	Horticulture (120).....	2	2	2
Horticulture (120).....	2	2	2	Military Drill (602).....	3	3	3

Junior Class

English (503).....	2	2	2	Rural Engineering (534).....	2	—	—
History (513, 514).....	2	2	2	Chemical Laboratory (303)...	4	4	4
Chemistry (302).....	2	2	2	Zoological Lab. (141).....	—	3	—
Rural Engineering (534).....	2	—	—	Botanical Laboratory (171)...	—	—	3
Zoology (141).....	—	2	—	Agriculture (102).....	2	—	2
Botany (171).....	—	—	3	Horticulture (121).....	2	3	3
Agriculture (102).....	2	—	3	Dairying (162).....	2	2	—
Horticulture (121).....	2	2	2	Military Drill (602).....	3	3	3
Dairying (161)...	2	4	—				
Military Science (600).....	1	1	1				

Senior Class

English (504) ..	—	2*	3	Chemical Laboratory (305)...	6	6	6
Political Economy (515).....	3	2*	—	Entomological Lab. (142).....	2	—	2
Chemistry (304).....	2	2	2	Forestry (172).....	2	—	—
Geology (112).....	2	4	—	Bacteriological Lab. (173, 174)...	—	4	2
Entomology (142).....	—	2	3	Agriculture (103).....	2	—	—
Forestry (172).....	2	—	—	Horticulture (122).....	—	2	2
Bacteriology (173, 174).....	—	2	4	Military Drill (602).....	3	3	3
Agriculture (103).....	2	2	2				
Stock Feeding (156).....	3	—	—				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE II.—AGRICULTURE AND ANIMAL INDUSTRY

This is a differentiation of the original course in agriculture for the purpose of affording students specially interested in general animal industry, dairying and veterinary medicine an opportunity to receive more instruction in these lines than was formerly practicable. There is a growing interest in animal industry throughout the State, and this course is intended to meet the demand for more specialized training in this phase of agriculture. In order to afford more time for instruction in these branches, some important, but less essential studies, have been omitted: but mathematics is retained through the second year and a special course in rural engineering put in the third year. English, history and civics are retained throughout the course, drawing the first year, physics the second year, geology the last year and chemistry the last three years, but slightly reduced and changed to meet the demands of this new course. Botany, bacteriology, zoology and entomology are so planned as to begin in the first year of the course and thereby contribute to clearer knowledge of farm crops, live stock, dairying, sanitation and animal diseases. General agriculture is taught during the first two years, horticulture the third and veterinary medicine the last three years; while live stock and dairying are taught throughout the course. The live stock work embraces the study of the breeds of horses, cattle, sheep, hogs and poultry, and includes judging, breeding, feeding, care and management of flocks and herds. In the dairy course are taken up the production, handling, manufacture and marketing of whole milk, cream, ice cream, butter and cheese.

COURSE II.—AGRICULTURE AND ANIMAL INDUSTRY

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Shop Work (240, 261).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (231).....	3	3	3
History (511, 512).....	3	3	3	Rural Architecture (233).....	3	3	3
Agriculture (100).....	2	2	-	Plant and Animal Life (170)...	3	3	-
Live Stock (150).....	-	-	2	Live Stock (151).....	-	-	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522).....	5	-	-	Veterinary Science (130, 131)...	3	2	-
English (502).....	3	3	3	Chemical Laboratory (301)....	3	2	2
Chemistry (300).....	3	3	3	Botanical Lab. (171).....	2	1	1
Physics (220).....	2	2	2	Surveying Field (530).....	-	2	2
Surveying (530).....	-	2	2	Physiological Lab. (140).....	-	2	2
Physiology (140).....	-	1	1	Agriculture (101).....	-	3	3
Agriculture (101).....	-	2	2	Live Stock (154).....	4	-	2
Live Stock (152, 153).....	2	2	2	Military Drill (602).....	3	3	3

Junior Class

English (503).....	2	2	2	Rural Engineering (534).....	2	-	-
History (513, 514).....	2	2	2	Chemical Laboratory (303)...	4	4	4
Chemistry (302).....	2	2	2	Zoological Lab. (141).....	-	2	2
Rural Engineering (534).....	2	-	-	Horticulture (120).....	2	2	4
Zoology (141).....	-	-	4	Dairying (163).....	-	4	-
Horticulture (120).....	2	2	2	Veterinary Science (134, 135)...	-	2	2
Dairying (161).....	2	4	-	Live Stock (155).....	4	-	-
Veterinary Science (132, 133)...	2	2	2	Military Drill (602).....	3	3	3
Military Science (600).....	1	1	1				

Senior Class

English (504).....	-	2*	3	Chemical Laboratory (305)....	3	3	3
Political Economy (515).....	3	2*	-	Entomological Lab. (142).....	3	-	3
Chemistry (304).....	2	2	2	Bacteriological Lab. (173, 175)...	-	3	3
Geology (112).....	2	4	-	Live Stock (159).....	3	3	-
Bacteriology (173, 175).....	-	-	4	Veterinary Clinic (139).....	3	3	3
Stock Feeding (157, 158, 160)...	3	3	3	Military Drill (602).....	3	3	3
Veterinary Science (136-7-8)...	4	3	2				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE III.—METALLURGY AND GEOLOGY

This course is intended to equip the student for engaging in manufacturing operations involving metallurgy or other branches of inorganic chemistry, or for employment as assayer or chemist in connection with mining operations. It also furnishes a basis upon which he may readily specialize in mining or geology, with a view to conducting actual mining enterprises or to employment in responsible positions on state or national surveys.

The student is well grounded in the principles of chemistry, physics, mechanics, geology and mineralogy, but the principal stress is laid on geology and metallurgical chemistry. He also acquires valuable practical knowledge of surveying, mechanical engineering, foundry practice, drawing and designing, in addition to the pursuit of courses in English, history, political economy, and other subjects of general educational value.

The first two years of the course are the same as in the engineering courses. The third and fourth years differ chiefly in the substitution of advanced work in chemistry and metallurgy and in geology and mineralogy for the higher mathematics and technical engineering work.

For further particulars see the detailed descriptions of subjects tabulated on the opposite page.

COURSE III.--METALLURGY AND GEOLOGY

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Woodwork (260).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (230).....	3	3	3
History (511, 512).....	3	3	3	Mechanical Drawing (232)....	3	3	3
Plant and Animal Life (100)..	2	2	2	Forge Work (240).....	3	3	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522-4-5).....	5	3	3	Foundry (241).....	2	3	3
English (502).....	3	3	3	Pattern Making (262).....	2	3	3
History (513, 514).....	2	2	2	Mechanical Drawing (234)....	2	2	2
Chemistry (300).....	3	3	3	Chemical Lab. (301).....	3	2	2
Physics (220).....	2	2	2	Descriptive Geom. (523).....	3	1	1
Surveying (530).....	1	2	2	Surveying Field (530).....	1	2	2
				Military Drill (602).....	3	3	3

Junior Class

English (503).....	2	2	2	Assaying (303).....	2	2	2
Chemistry (302).....	2	2	2	Chemical Lab. (303).....	4	4	4
Mineralogy (111).....	3	3	3	Mineralogical Lab. (111)....	2	2	2
Geology (113).....	3	3	3	Mechanical Drawing (237)....	2	2	2
Physics (221).....	2	2	2	Physical Lab. (222).....	2	2	2
Mechanism (210).....	2	1	1	Military Drill (602).....	3	3	3
Mechanics (211).....	1	2	2				
Military Science (600).....	1	1	1				

Senior Class

English (504).....	1	2*	3	Chem. and Metallurgical Lab-			
Pol. Economy (515).....	3	2*	2	oratory (311).....	6	6	6
Chemistry (306).....	2	2	2	Practical Geol. (116).....	3	3	3
Metallurgy (310).....	2	2	3	Mechanical Lab. (215).....	3	3	3
Economic Geology (115).....	2	3	4	Military Drill (602).....	3	3	3
Petrography (114).....	2	2	2				
Mechanical Eng. (213).....	3	3	1				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE IV.—MECHANICAL AND ELECTRICAL ENGINEERING

This course is designed to fit young men for responsible positions in the various departments of these professions. It attempts, by practical and theoretical instruction, to lay a solid scientific foundation upon which the student may build rapidly after graduation. The experience necessary to make a successful engineer cannot be acquired in a college course, but the technically educated graduate usually soon distances his uneducated competitors.

While devoting considerable time to purely technical work, it is recognized that to obtain the best ultimate results, the student should be given a thorough training in the English language and as broad and liberal a culture as the time available and his previous preparation will permit. Seeking in some degree to attain this end, such studies as history, English literature, civics, economics, geology, and botany are taught in the course, as well as the partly technical sciences, mathematics, physics, and chemistry.

Within the department are taught physics, mechanics, and mechanical and electrical engineering. Along with the theoretical instruction in these subjects, practice is given in laboratories equipped with the best modern apparatus.

Shop instruction is given in carpentry, turning, and pattern making ; in moulding ; chipping and filing, and the use of machine tools. The purpose of this instruction is not to turn out skilled artisans, but rather men capable of directing enterprises into which these trades enter as component parts.

The work in drawing is made one of the features of the course, including instruction in freehand drawing in the first year, mechanical drawing during the first three years and machine design in the fourth year.

Graduates from this course are filling responsible positions in various lines of mechanical and electrical engineering and in drawing.

COURSE IV.—MECHANICAL AND ELECTRICAL ENGINEERING

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Woodwork (260).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (230).....	3	3	3
History (511, 512).....	3	3	3	Mechanical Drawing (232)....	3	3	3
Plant and Animal Life (100)..	2	2	2	Forge Work (240).....	3	3	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522-4-5).....	5	3	3	Foundry (241).....	2	3	3
English (502).....	3	3	3	Pattern Making (262).....	2	3	3
History (513, 514).....	2	2	2	Mechanical Drawing (234)....	2	2	2
Chemistry (300).....	3	3	3	Chemical Lab. (301).....	3	2	2
Physics (220).....	2	2	2	Descriptive Geom. (523).....	3	—	—
Surveying (530).....	—	2	2	Surveying Field (530).....	—	2	2
				Military Drill (602).....	3	3	3

Junior Class

Mathematics (525-527).....	5	5	5	Mechanical Drawing (235) ...	3	3	3
English (503).....	2	2	2	Machine Shop (250).....	3	3	3
Physics (221).....	2	2	2	Physical Lab. (222).....	3	3	3
Electrical Eng. (200).....	3	3	3	Electrical Lab. (201).....	3	3	3
Mechanism (210).....	2	—	—	Military Drill (602).....	3	3	3
Mechanics (211).....	—	2	2				
Military Science (600).....	1	1	1				

Senior Class

English (504).....	—	2*	3	Machine Shop (251).....	3	3	3
Political Econ. (515).....	3	2*	—	Machine Design (238).....	3	3	3
Electrical Eng. (202).....	5	5	5	Electrical Lab. (203).....	3	3	3
Mechanical Eng. (213).....	3	3	5	Mechanical Lab. (214).....	3	3	3
Mechanics (212).....	2	2	—	Military Drill (602).....	3	3	3
Geology (112).....	1	2	1				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE V.—CIVIL ENGINEERING

This course is intended to prepare young men for entrance upon professional practice in some of the many branches of civil engineering, and also to meet the needs of those who, having been engaged in engineering work without a course of instruction, desire to equip themselves for more successful competition with those who have had such instruction.

In connection with the technical studies, liberal training is given in English, history, economics, pure mathematics and the physical sciences. The course will also be found to embrace the same amount of drawing, shop work, mechanical engineering and mechanical laboratory practice as the other engineering course.

The distinctive work pursued by students in this course includes the study of land surveying and plotting, topographic surveying and mapping; location, construction, and maintenance of roads, railroads, streets, and pavements; strength of building materials, masonry construction, foundations on land and in water; analytic and graphic investigations of stresses in girders, roofs, and bridges, and the design of these structures; the principles of hydraulics as applied to dams, reservoirs, canals, municipal water works, and the development of water power.

For fuller details, see descriptions of instruction in these subjects.

COURSE V.—CIVIL ENGINEERING

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Woodwork (260).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (230).....	3	3	3
History (511, 512).....	3	3	3	Mechanical Drawing (232).....	3	3	3
Plant and Animal Life (100)...	2	2	2	Forge Work (240).....	3	3	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522-4-5).....	5	3	3	Foundry (241).....	2	3	3
English (502).....	3	3	3	Pattern Making (262).....	2	3	3
History (513, 514).....	2	2	2	Mechanical Drawing (234).....	2	2	2
Chemistry (300).....	3	3	3	Chemical Lab. (301).....	3	2	2
Physics (220).....	2	2	2	Descriptive Geom. (523).....	3	-	-
Surveying (530).....	-	2	2	Surveying Field (530).....	-	2	2
				Military Drill (602).....	3	3	3

Junior Class

Mathematics (525-527).....	5	5	5	Mechanical Drawing (236).....	3	3	3
English (503).....	2	2	2	Machine Shop (250).....	3	3	3
Physics (221).....	2	2	2	Physical Lab. (222).....	2	2	-
Civil Engineering (531-3).....	3	3	3	Civil Eng. Field (531-3).....	4	4	3
Mechanism (210).....	2	-	-	Mineralogical Lab. (110).....	-	-	3
Mechanics (211).....	-	2	2	Military Drill (602).....	3	3	3
Military Science (600).....	1	1	1				

Senior Class

English (504).....	-	2*	3	Mechanical Drawing (239).....	3	3	3
Political Econ. (515).....	3	2*	-	Mechanical Lab. (214).....	3	3	3
Civil Engin. (535-7).....	5	5	5	Civil Eng. Field (535-7).....	6	6	6
Mechanical Eng. (213).....	3	3	5	Military Drill (602).....	3	3	3
Mechanics (212).....	2	2	-				
Geology (112).....	1	2	1				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE VI.—TEXTILE INDUSTRY

The aim has been to arrange a course in which the students will not only be given a knowledge of textiles, but at the same time and along with this special training, be allowed the opportunity of acquiring a good general education. For this reason the course does not follow special lines closely until the junior year, in order to allow time to be devoted to the culture studies and to instruction in the general principles of the sciences involved in manufacture. The course as laid out is intended to give the student a broad foundation upon which to specialize.

The department was established primarily to direct young men in their study of the various fibers and the manipulations and after-processes of manufacture demanded by the trade. To this end the students are encouraged to make experiments, thus becoming familiar with results to be expected from certain known conditions. The junior and senior years are devoted almost exclusively to the pursuance of textile subjects. The student is brought face to face with facts and conditions, from the proper observation and study of which he may obtain information and experience that would take him years to acquire in the mills.

The graduate in this course is in possession of such information and has acquired such experience and knowledge in handling raw materials and manufacturing machinery as, if supplemented by energy, application, and tact, will soon place him in the first ranks of practical manufacturers.

COURSE VI.—TEXTILE INDUSTRY

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Woodwork (260).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (230).....	3	3	3
History (511, 512).....	3	3	3	Mechanical Drawing (232).....	3	3	3
Plant and Animal Life (100)...	2	2	2	Forge Work (240).....	3	3	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522-4-5).....	5	3	3	Foundry (241).....	2	3	3
English (502).....	3	3	3	Pattern Making (262).....	2	3	3
History (513, 514).....	2	2	2	Mechanical Drawing (234).....	2	2	2
Chemistry (300).....	3	3	3	Chemical Laboratory (301).....	3	2	2
Physics (220).....	2	2	2	Descriptive Geom. (523).....	3	-	-
Surveying (530).....	-	2	2	Surveying Field (530).....	-	2	2
				Military Drill (602).....	3	3	3

Junior Class

Mathematics (525).....	5	5*	-	Machine Shop (250).....	3	3	3
English (503).....	2	2	2	Chemical Lab. (303, 420).....	3	3	3
Textile Chemistry (420).....	2	2	2	Weaving (410, 411).....	3	3	3
Designing (412).....	2	1*	4	Carding & Spinning (400-406)	3	3	3
Carding & Spinning (400-406)...	1	2*	4	Military Drill (602).....	3	3	3
Mechanism (210).....	2	-	-				
Mechanics (211).....	-	2	2				
Military Science (600).....	1	1	1				

Senior Class

English (504).....	-	2†	3	Mechanical Laboratory (215)...	-	3	3
Political Economy (515).....	3	2†	-	Cam Drawing (238).....	2	-	-
Mechan. Engineering (213)...	3	3	-	Carding & Spinning (407-409)...	3	2	3
Carding & Spinning (407-409)...	2	2	2	Dyeing (421).....	4	4	3
Textile Chemistry (421).....	2	2	2	Weaving (410, 411).....	4	4	4
Designing (412).....	3	2	2	Military Drill (602).....	3	3	3
Cloth Analysis (414).....	-	2	2				
Jacquard Designing (413).....	-	-	2				
Military Science (601).....	1	1	1				

*Upon completion of Analytical Geometry (525), the time devoted to Junior Designing and to Carding and Spinning is increased to 4 hours each in the second term.

†Political Economy ends and Senior English begins at the middle of the second term.

Special Courses

Besides students in the usual undergraduate courses, there may be farmers and others of mature age, including graduates of other institutions, who desire to avail themselves of the special privileges offered by the College. To such persons the opportunity is offered, under the advice of the director of the department in which work is contemplated, to pursue special lines of study or investigation in any of the subjects taught in the College, provided attention can be given to them without detriment to the regular classes. Such special students will be admitted after they have satisfied the director of the department that they are qualified to pursue the work with profit.

Special students are excused from military duty, but are subject to the general regulations of the College requiring good conduct and diligent prosecution of the course selected. They are not admitted to barracks, but rooms and board may be secured in the community at reasonable rates. They will be required to pay the usual fees, except the price of the uniform and board in barracks.

Special Course in Electrical Engineering

Students desiring to take a special course in electrical engineering should remember that no one can hope to become an electrical engineer who has not the necessary foundations in mechanical engineering, to which electrical engineering is a superstructure. Two-thirds of an electrical engineer's training must be mechanical. No special classes will be formed, and students desiring to enter the junior class will be expected to be prepared on elementary mechanical drawing, physics and chemistry, and on mathematics, through plane trigonometry. They will be expected to take with the junior class, in addition to their electrical studies, physics, mechan-

ics, mathematics, mechanical drawing and machine shop work. Without these additional branches the student will not be prepared for the more strictly engineering work of the senior year.

To enter the senior class, a student must be proficient in the work of the junior year, in which physics and calculus are completed.

In addition to the electrical subjects prescribed for the senior year, he must take—unless he is proficient along these lines—mechanics, mechanical engineering and laboratory, machine shop, drawing and machine design.

Students who are not prepared, or are not willing to take the other subjects necessary to successful study of electrical engineering, will not be permitted to take a special course in this line.

Special Textile Course

To meet the demands of southern conditions for a class of young men trained in the finer details of cotton manufacture, a special two-year course has been arranged to accommodate a limited number of students who may not be in a position to take the regular four-year textile course, as scheduled and described on the preceding pages.

The course includes carding, spinning, designing, and weaving, and is thoroughly practical. Since it does not include any of the other subjects treated in the regular four-year course, it allows the student to devote his entire attention to the pursuit of textiles in its several branches.

To pursue this course successfully, the student must be well grounded in arithmetic, and should be capable of expressing his thoughts clearly in writing. The student seeking admission to this course must present himself at the College during the regular entrance examination period, September 8th to 13th, 1904, and satisfy his instructors that he is prepared to undertake the work. No student will be admitted after that

time. Students must be 18 years of age, and since they will not be required to perform military duty, must arrange for board outside of barracks. They will, however, be subject to the general rules and regulations of the College. Students who have failed in the regular College courses will not be allowed to change to this course. No diploma is conferred upon the completion of this work.

Irregular Courses

Every student is required to pursue one of the regular courses, as scheduled on the preceding pages, unless for special reasons this seems inadvisable or impracticable. In such cases an irregular course may be granted by the Faculty on the following conditions:

1. The course applied for must be such as to fully and profitably occupy the student's time.
2. The application must be accompanied by the written approval of parent or guardian and of instructors in all subjects included in the course.
3. Irregular courses are not granted to students in the preparatory class.
4. Diplomas are not issued to students in irregular courses, but a certificate of proficiency will be given when the work completed is deemed worthy of it.

A student who desires to take an irregular course will be referred to a member of the Faculty, who will advise him in reference to the character of work that is best for him to pursue. After the course has been thus arranged and approved by the Faculty, no other changes will be allowed without the endorsement of his adviser.

Preparatory Course

For the benefit of students who are not prepared to enter the College classes a course of one year of preparatory work

is provided, in which thorough instruction is given in the elements of English, mathematics, history, and geography. This course is designed to meet the needs of young men, particularly farmers' sons, who have not had the advantages of the thorough and systematic training afforded by many of the town and city schools.

The instruction in this department is under the immediate supervision of the professors of English, mathematics, history, and geology in the College, and is closely articulated with the work of the advanced classes.

The course of study is as follows :

Arithmetic, 5 hours a week

Algebra, 5 hours a week.

Grammar and Composition, 5 hours a week.

Reading and Spelling, 5 hours a week.

Geography, 3 hours a week.

History, 2 hours a week.

Students who satisfactorily complete this course will be advanced to the freshman class. Those who fail to pass to the higher class may review the course the next session. Upon recommendation of the instructors of the department, a student in the preparatory class may be permitted, at any time during the session, to stand examinations for admission to the freshman class.

Reports, Grades and Promotions

Reports of class-standing and discipline are sent to parents at intervals of approximately one month throughout the session. During 1904-1905 these reports will be made up for the periods ending on the following dates, and will usually be mailed to parents about one week later : Oct. 14th, Nov. 11th, and Dec. 15th,* 1904 ; Feb. 3d, Mar. 10th,* Apr. 21st, and May 26th,* 1905. Dates marked with the asterisk (*) are ap-

proximate, depending upon the beginning of the respective term examinations.

The session is divided into three terms, ending Dec. 22d, 1904, Mar. 22d, and June 13th, 1905, respectively. Examinations are held at the close of each term, and reports are sent to parents giving the results of these examinations and also the averages of monthly grades in all subjects pursued by the student. The student must attain at least the pass-mark, 60 per cent., on both examination grade and term average in each term separately and in every subject in his course, in order to be entitled to promotion to the next higher class.

No student is entitled to a second examination in any subject, except by special permission of the Faculty. In case of only one or two failures such permission is usually granted, provided the student's record indicates a reasonable degree of application to his studies.

Students whose conditions have not been removed by the opening of the next session will be required to take the work of the preceding year over, unless for special reasons an extension of time is allowed.

Students who are taking over the work of any year in a regular course, or who for any reason have been put back from a higher to a lower class, are required to take the full work of that class.

A student taking any subject over waives the right to all previous records in that subject, and is placed upon the same footing as students taking the work for the first time.

Parents will be advised to withdraw students who habitually shirk duties.

Degrees, Medals and Honors

The degree of Bachelor of Science (B. S.) will be conferred on any student who satisfactorily completes one of the prescribed four-year courses of study, as tabulated on the pre-

ceding pages, and submits an approved thesis not later than June 1st of his senior year. The course pursued is indicated on the diploma.

Distinguished Students.—Students who make first grade (90 per cent. or over) in all studies for any session are designated as *distinguished*, and their names are published in the catalogue of the succeeding year.

Trustees Medal.—The Board of Trustees has established a gold medal to be awarded annually to the best speaker among the representatives of the literary societies at commencement. These representatives are chosen by judges selected by the societies at the annual public exercises in Memorial Hall. The medal is awarded by judges selected by the Faculty. Won in 1903 by H. C. Tillman.

Literary Society Medals.—It is customary for the three literary societies to award gold medals annually for excellence in debate, oratory, and declamation.

The Chronicle Medals.—*The Chronicle*, the monthly magazine published by the literary societies, also usually awards three gold medals, for the best story, the best poem, and the best essay contributed by students during the year.

The Colors of Battalion are awarded at the close of each session to the best drilled battalion, and are carried by it during the succeeding session. In June, 1903, this distinction was won by the Second Battalion, C. W. Legerton, Cadet Major.

A blue silk C. A. C. Flag is awarded in June of each year to the best drilled company, and carried by it during the succeeding year. This was won in June, 1903, by Company "D," W. H. Barnwell, Captain.

R. W. Simpson Medal.—A gold medal thus designated is

awarded annually to the best drilled cadet in the freshman, sophomore and junior classes. This medal was won in 1903 by Cadet J. M. Hill, class of 1904.

Publication in Official Army Register.—The names of the three graduates most distinguished in the Military Department each year are published in the Official Army Register of the succeeding year. In 1903 this distinction was won by T. M. Harvey, G. F. Norris, and C. W. McSwain.

The Commandant is also required to report annually to the War Department the names of the three cadets most eligible for appointment as officers in the United States Army. The names reported in June, 1903, were J. C. Wylie, T. S. Perrin, and C. B. Hagood.

Second Lieutenancy U. S. Army.—General Orders, No. 39, War Department, contains the following paragraph:

“The reports of the regular inspections of the colleges and schools to which officers of the Army are detailed in pursuance of law as principals or instructors will annually hereafter be submitted to the General Staff for its critical examination, and the Chief of Staff shall report to the Secretary of War, from the institutions which have maintained a high standard, the six institutions whose students have exhibited the greatest interest, application, and proficiency in military training and knowledge. The President authorizes the announcement that an appointment as second lieutenant in the Regular Army from each one of the said six institutions will be awarded to an honor graduate who has taken a military course thereat, provided that sufficient vacancies exist after caring for the graduates of the Military Academy at West Point and the successful competitors in the annual examination of enlisted men.”

The term “honor graduate” signifies any graduate who would rank as one of the first five of his class.

Fees and Expenses

The regular fees and charges for the session of 1904-1905 will be as follow :

Incidental fee	\$5 00
Medical fee	5 00
Uniform ..	23 00*
Board and washing.....	67 52
Breakage fee	3 00
Tuition ..	40 00
Total ..	\$143 52

These charges must be paid in quarterly installments as follow :

September 14th, 1904.....	\$62 88
November 18th, 1904.....	26 88
February 1st, 1905.....	26 88
April 7th, 1905.....	26 88

Remittances should be made in cash, or by money order or New York exchange—*not by local checks*—to Dr. P. H. E. Sloan, Treasurer, Clemson College, S. C. Banks charge exchange on local checks.

A deduction will be made for board and washing only when a student is absent one month or more.

The breakage fee is a deposit to cover damage or destruction of College property, and any amount remaining to the credit of a student at the end of the session will be returned to him. Whenever College property is damaged the cost of repair is charged to the individual student, if the responsibility can be determined. Otherwise the cost is divided equally among all the students. Any student whose breakage

*The price of uniform is subject to market fluctuations.

account exceeds \$3.00 will be required to make another deposit.

A fee of \$1.50 is charged for diploma, payable before graduation.

The above charges do not include cost of books and stationery, which, however, may be obtained at the Cadet Exchange at wholesale prices.

Free Tuition

Section 1120, Revised Statutes of South Carolina, 1893, Vol. I., setting forth the powers and duties of the Board of Trustees, contains the following provision:

“They shall charge each student a tuition fee of forty dollars per annum; . . . indigent students shall not be required to pay said tuition fee.”

In accordance with this law, residents of South Carolina are granted free tuition upon presentation of the following certificate, properly signed:

CERTIFICATE OF INABILITY TO PAY TUITION.

THIS IS TO CERTIFY, *That I am unable to pay tuition for my.....in the Clemson Agricultural College for the session of 1904-1905.*

.....
Father or Guardian.

I hereby certify that, to the best of my knowledge and belief, the above statement is true.

.....
County Auditor.

Certificate blanks will be furnished upon application to the President.

For students receiving free tuition the quarterly charges

will be \$10 less in each case than the amounts given above, namely:

September 14th, 1904.....	\$52 88
November 18th, 1904.....	16 88
February 1st, 1905.....	16 88
April 7th, 1905.....	16 88

The total charges for the year in such cases are only \$103.52.

Agricultural Scholarships

By an Act of the State Legislature in the session of 1904, 124 beneficiary scholarships were established, of the value of \$100 per annum each, and apportioned among the counties in the same manner as the members of the House of Representatives.

The law provides "That the said scholarships shall be awarded by the State Board of Education, upon the recommendation of the County Boards of Education of the several counties, to the most worthy and needy young men of such age as is fixed by the Board of Trustees of said College for other students, who shall have passed an approved entrance examination upon the common school branches and made at least sixty per cent. upon such examination; and preference shall be given to those young men who desire to take the agricultural course."

Examination questions are to be prepared by the President and Faculty of the College and sent to the County Board of Education of each county on or before the 15th day of July in each year, with a statement of the number of vacant scholarships to which the county is entitled. The County Board holds the examinations, grades the papers, and forwards them with recommendations to the State Board of Education.

Section 4 reads, "That before applying for said scholarships applicants shall make proof under oath to their respect-

ive County Boards of Education, as required by law for scholarships in the South Carolina Military Academy, of their financial inability to attend college, before they shall receive from said Board permission to stand such examination."

The law further provides that these scholarships "shall each continue for the term of four years, or for such length of time as the beneficiary shall be able to maintain himself and comply with the rules of the College ; and said sum of one hundred dollars per annum shall be placed to the credit of each of said beneficiaries, and applied towards the payment of his board and other necessary school expenses."

GROUND, BUILDING AND EQUIPMENT

Grounds and Buildings

CAMPUS AND FARM.—The College grounds occupy about 1,122 acres of land, including the campus, sites of buildings and residences, grounds for military drill and outdoor athletics, the College farm, and the Experiment Station grounds. The campus, including about 200 acres, is laid out in walks, drives and lawns, and is shaded by a beautiful grove of native forest trees.

The Main Building, Barracks, Etc.

THE MAIN BUILDING is a three-story brick structure, 130 by 140 feet, trimmed with gray sandstone. It contains twenty-two rooms, including recitation rooms, library and reading room, literary society halls, laboratories for botany, entomology, physics, geology and mineralogy, besides the offices of the President, the Commandant, the Treasurer, and the Secretary of the Board of Fertilizer Control. Adjoining this building is Memorial Hall, the College chapel, which has a seating capacity of about 1,000. It is used for religious services and as an assembly room. The building is provided with steam heat and electric lights.

THE CADET BARRACKS comprise two large brick buildings. One is three stories high and contains one hundred and forty-eight rooms for students, a dining hall 134 by 44 feet, and a kitchen 50 by 37 feet. The other building is 199 by 42 feet, and contains 82 rooms. These buildings are heated by steam and lighted by electricity, and have an abundant supply of pure spring water. The rooms in the barracks are furnished with single width iron cots and other necessary appointments. The dining hall is well supplied with table linen, silver ware, and china, and the kitchen is furnished with modern culinary appliances.

The bath rooms and closets are located in brick buildings apart from the barracks and connected with them by covered gangways.

THE HOSPITAL, located about a quarter of a mile from the barracks, is a wooden building, especially designed for the purpose. It is lighted by electricity, and has a thorough sewerage system. The hospital is in the immediate charge of the Surgeon, who is assisted by an experienced matron and nurses, thus ensuring the best personal attention to each patient.

THE LAUNDRY is a brick building specially constructed and fitted with the improved machinery of a modern steam laundry, and is operated exclusively for students.

Agricultural Buildings

THE AGRICULTURAL HALL, a building 146 by 94 feet, in colonial style, and constructed of red side-cut brick, with columns and trimmings of oolitic limestone, is being erected. It is expected that it will be ready for occupancy by the opening of the session of 1904-1905. It will be furnished with a complete system of electric lights, water and sewer connections, and steam heat; and will provide class-rooms and laboratories for instruction in agriculture, horticulture, soil physics, botany and bacteriology, zoology and entomology, veterinary science, dairying and animal industry, geology and mineralogy, and offices for the Experiment Station. It also contains a room 40 by 60 feet, with a gallery, for a natural history museum, and a gymnasium hall of the same dimensions below.

THE HORTICULTURAL GROUNDS embrace an area of thirty acres. Eight acres are devoted to apples for experiment purposes, six acres to peaches, two acres to grapes, two acres to pecans, one acre to plums, seven acres to experiments with



MAIN BUILDING AND CORPS OF CADETS

small fruits and vegetables, and three acres to ornamental trees, shrubs and flowers.

THE GREENHOUSE is 21x140 feet and is heated by hot water. It is used for class instruction in ornamental horticulture and for experiment work. The house now contains three thousand large pot plants of various kinds and nine thousand small plants used for bedding purposes on the College campus.

THE CANNERY is a frame building 25x35 feet. It is equipped for canning fruits and vegetables of all kinds.

THE VETERINARY HOSPITAL is a two-story frame building 48 by 65 feet, with basement 18 by 30 feet. It is furnished with electric lights, hot and cold water and is heated by means of stoves. The basement contains dissecting room and a small room for hot water plant, coal and general storage. On the first floor are rooms for office, instruments and medicines, toilet, horse shoeing, harness closet, and an examining floor, operating table, soaking vat, three box stalls and three tie stalls. On the second floor are rooms for attendant, pharmacy, storage of grain, kennels and cages for small animals and a hay mow.

Convenient to this building is an operating shed 24x40 feet, enclosed on three sides, but well lighted, and it has a large hay loft. There is a well sodded lot containing about two acres connected with the hospital. It is fenced with woven wire and divided into three paddocks. In one of these is an open cattle shed 13 by 32 feet, and a chute used in de-horning, inoculations, and other operations where a herd is to be handled.

THE DAIRY BUILDING is a wooden structure constructed and equipped especially to illustrate the most approved methods of dairy practice.

THE EXPERIMENT STATION DAIRY BARN is a new building, 110 by 38 feet, located on one of the highest elevations of the College property. It is a thoroughly modern structure from the standpoint of both convenience and sanitary conditions. It has a concrete floor, is lighted by electricity, and contains water in all parts of the building for washing floors, mixing food, etc. It is fitted with 38 Taylor steel stanchions, which are both strong and comfortable. At one end of the building are four 50-ton silos, and the second floor, which has a capacity of 50 tons of loose hay, is equipped with a hay carrier that will elevate a load of hay at a time.

A smaller barn, 50 feet in the rear, provides hospital stalls for sick cows, and also stalls and pens for young calves. Around the building are a number of paddocks, all opening into the barnyard. There are two pastures, and the work of inclosing two more is in progress. Sheep raising has recently been added, and other lines of live stock work are to be taken up in the near future, with the installation of additional equipment for experimental work.

FARM BUILDINGS.—The College farm is provided with commodious barns and other farm buildings of modern design, which are described more fully in connection with the equipment for instruction in agriculture.

Mechanical and Electrical Buildings

THE MECHANICAL BUILDING is a substantial brick structure containing about 30,000 square feet of floor space. On the first floor are the mechanical laboratory, machine shop, forge shop, foundry, and the power and light station. On the second floor are the offices and recitation rooms, while the wood shop occupies the whole of a two-story wing, 45 by 100 feet. The third floor is entirely occupied by the division of drawing.

THE ELECTRICAL INSTRUMENT LABORATORY is a brick building of special design, arranged especially for delicate instrument work.

THE DYNAMO LABORATORY is a modern brick structure, 37 by 80 feet. Besides containing the dynamo electric machinery for instructional use, it also contains the electrical engineering lecture room.

Chemical Buildings

THE CHEMICAL DEPARTMENT occupies two buildings. One is a two-story brick structure, 50 by 80 feet, covered with slate, and finished inside with Southern pine. Overlapping this at one corner, and connected with it, is a new and somewhat similar building, 53 by 86 feet, of modern style and handsome design. This double building constitutes a commodious structure adequate to all the needs of the department.

Textile Building

THE TEXTILE BUILDING is a two-story brick structure with basement, of modern cotton mill design, protected from fire by automatic sprinklers and a 10,000 gallon water tank in the tower. The first floor is occupied by recitation rooms, carding and spinning rooms, and office. On the second floor are recitation rooms, the designing and weaving departments. In the basement are located the dyeing, bleaching and printing machinery.

Residences and Hotel

THE CALHOUN MANSION, the former residence of John C. Calhoun, is kept in honor of his memory, in accordance with the provisions of Mr. Clemson's will.

RESIDENCES.—Ten two-story brick buildings, nine six-room cottages, and twenty-seven smaller houses, all situated

on the campus, furnish residences for professors and other officers of the College.

CLEMSON CLUB HOTEL.—The College Hotel, a frame building, situated on a hill overlooking the campus, is operated as a club by several members of the Faculty. In addition to furnishing a home for the members of the club, it is open the entire year to a limited number of transients.

Water, Light and Heat

THE GENERAL WATER SUPPLY is collected from springs through iron pipes into a reservoir, from which it is pumped into a standpipe one hundred feet high. From this it is distributed through mains to the various College buildings and to all parts of the campus.

THE DRINKING WATER SUPPLY is pumped from a bold spring directly into barracks, in a continuous stream. It is thus furnished fresh, pure and cold. This and all sources of water supply are kept under constant and strict surveillance and the waters are frequently analyzed as a precaution against contamination.

THE SEWER SYSTEM.—All of the larger buildings are connected with an adequate sewer system, which empties into Seneca River more than half a mile from the campus.

LIGHT AND HEAT.—All of the College buildings and most of the residences on the campus are lighted by electricity furnished from the central power station in the Mechanical building. The seven principal College buildings are also heated by steam.

Equipment for Practical Instruction

Agricultural Department

Agriculture

The College farm has a large storage barn provided with silos, a cow barn furnished with various forms of stanchions, a mule barn provided with the most improved forms of stalls and feed-racks, implement and wagon sheds for storage of tools, etc., compost building for making compost in large quantities, and two large cribs for storage of corn.

Among agricultural machinery and implements may be mentioned the following: Self-binder, corn-harvester, Deering ball-bearing mower, Osborne mower, self-dumping rake, check-row corn planter, Buckeye cultivator, B. F. Avery cultivator, Tower cultivator, disc-cultivator, spring-toothed harrow, smoothing harrows, various forms of pulverizers, manure-spreading machines, fertilizer and grain drill, various forms of small fertilizer drills, Planet Jr. drill, two Planet Jr. plows, scientific mill, stone grist mill, Tornado ensilage cutter, small thresher, hand-gin, rock-crusher, road machine, three terrace levels, and a 10-kw. electric motor.

Geology and Mineralogy

The systematic collections contain about 1,500 labeled specimens of rocks, minerals, and fossils. These are exhibited in glass cases in the laboratory, and are available to students. There is also an unlabeled collection of minerals for practice in identifying the more important species at sight, and unlabeled collections of the most important minerals are provided for determinative work in the laboratory.

The laboratory is supplied with water and gas and all apparatus and reagents necessary for the determination of minerals by means of their chemical and physical properties. A

chemical balance is also provided, and a petrographic microscope, with photomicrographic camera and all important accessories.

The class-room is supplied with large physical wall maps of the world and of all the continents, a select series of topographic contour-maps furnished by the United States Geological Survey, an 18-inch terrestrial globe, a 20-inch relief globe, a set of geological and geographical relief models, and several hundred lantern slides.

The geological department of the College library contains the principal standard works of reference in geology and mineralogy, and receives all publications of the United States Geological Survey as issued, including annual reports, monographs, geologic folios, and bulletins.

Soil Physics

The soil physics laboratory is provided with all apparatus necessary for the determination of water content, absorptive capacity, water-holding power, specific gravity, and other physical properties of soils, and for performing experiments in evaporation, percolation, capillarity, etc., and making mechanical analyses.

Veterinary Science

The veterinary hospital has been described in the account of "Grounds and Buildings" on the preceding pages.

The veterinary class-room and laboratory is about 30 by 45 feet, provided with steam heat, electric lights, water, gas, lecture chairs, tables, gas counter, dark-room and storage cases. It is amply supplied with apparatus, including stereopticon, microscopes, microtome, incubators, sterilizers, chemicals, skeletons, anatomical specimens, plaster casts, and the equipment for technical work.

When the new Agricultural Hall is completed the veterinary division will have quarters there. This will include an

office and laboratory on the first floor and a live stock room, with adjacent rooms for animals on the ground floor. The lecture room will have concrete floor, elevated seats, and be so arranged that the largest domestic animal may at any time be used before the classes for demonstration purposes.

The veterinary hospital is a frame structure of modern design, 48 by 65 feet, containing rooms for office, drugs, dissecting and horse-shoeing, besides stalls, feed-bins, water-supply and electric lights, and a revolving operating table. The surgical instruments and appliances now on hand, with a few additions, would do credit to a regular veterinary college. A complete outfit for shoeing horses is provided. A good stock of drugs and chemicals is kept on hand and prescriptions are filled on request.

Zoology and Entomology

The laboratory of this division occupies a room on the second story of the main building. It is equipped with simple and compound microscopes, microtomes, dissecting instruments, photographic outfit, stereopticon, lantern slides and charts. The entomological cabinet contains a large number of injurious and beneficial insects, and this cabinet is still growing.

The students have access to a small but carefully selected entomological library.

Dairying and Animal Husbandry

The dairy building is provided with steam plant and water works, and everything required for making butter and cheese. In this laboratory are located the leading makes of cream separators, churns, and milk-testers.

The new experiment barn is provided with modern apparatus and conveniences for the proper handling of cattle, and the following breeds of cattle have been recently purchased

and placed at this barn for experimental purposes: Ayrshire, Devon, Jersey, Hereford, Polled Angus, Polled Durham, Short-horn (bare-faced dairy strains), Guernsey, Holstein; also six each of registered Shropshire and Southdown sheep.

Botany and Bacteriology

These laboratories are located on the third and fourth floors of the main building. They contain a good equipment for satisfactory work in botany and bacteriology, including twenty-five dissecting microscopes, fourteen compound microscopes, student dissecting sets, student microtomes, Zimmermann microtome, embedding baths, balances, water still, incubator, Arnold and Koch sterilizers, autoclave, dry ovens, anaerobic apparatus, cameras for ordinary and photomicrographic work.

The students have access to a small botanical library.

A creditable beginning has been made in collecting a herbarium. This now includes plants collected in the State, plants received by exchange, and a donation of about twenty-five hundred mounted specimens from Dr. A. P. Anderson, which includes many species not present in the flora of South Carolina.

Mechanical and Electrical Department

Electrical Engineering

ELECTRICAL INSTRUMENT LABORATORY.—This is a separate brick building, designed especially for delicate electromagnetic work—no iron, steel or other magnetic substances having been used in its permanent construction. It contains, in addition to all necessary elementary apparatus, the following instruments: Kelvin-Deka ampere balance, Kelvin four-coil astatic galvanometer, four D'Arsonval dead-beat galvanometers, large ring tangent galvanometer, three Elliott Brothers' standard resistance sets, Elliott Brothers' standard

tangent galvanometer, Queen's standard ballistic galvanometer, Nalder Brothers' sensitive galvanometer, Rowland-D'Arsonval ballistic galvanometers, Willyoung standard condenser, Becker's chemical balance, Cahart-Clark standard cell, thermometers, Wheatstone bridges, storage and primary cells, etc.

DYNAMO LABORATORY.—To meet the demands of larger attendance and increased equipment, a new building has been provided in which is installed the dynamo-electric machinery. This building also contains a class room and a dark room for photometric work. It is a single story brick structure, 37x80 feet, with basement for supply rooms.

The main floor is divided into a class room 25x35 feet, and a dynamo laboratory room 53x35 feet. The building is heated by steam and lighted by inclosed arc and incandescent lamps.

The lecture room has elevated seats and is equipped with a complete line of illustration models, apparatus and electrical instruments. It contains an electro magnet capable of supporting the weight of two tons.

The Dynamo Laboratory contains, in addition to rheostats, speed counters, switches, and other small apparatus, the following machines and instruments:

50 H. P. high speed McEwen automatic engine.

Direct Current Generators—15 kilowatt Mather, 17 kilowatt Lundell, 2 1-2 kilowatt Crocker-Wheeler, two 2 kilowatt Kester.

Direct Current Motors—15 and 10 H. P. Kester, three 1-6 H. P. Crocker-Wheeler.

Direct Current Instruments—Weston laboratory standard voltmeter, set of Weston portables, Jewell ammeter and voltmeter, Weston switchboard ammeter and voltmeter, Thompson recording wattmeter, etc.

Arc Lighting Apparatus—Brush and Thompson-Houston generators, Genl. Elec. Co. constant current transformer, principal makes of open and inclosed arc lamps.

Alternating Current Apparatus—15 kilowatt G. E. Co. 2 and 3 and 6 phase revolving field generator complete with marble switchboard and full set of indicating instruments.

7 1-2 kilowatt G. E. Co. single, two and three phase rotary converter; 7 kilowatt 3 phase converter built by students.

Genl. Elec. Co. 2 and 3 phase induction motors. Three, 3,000 watt constant potential transformers. Assortment of small transformers, motors and models.

Alternating Current Instruments—Two Weston and one Genl. Elec. wattmeters, Weston standard A. C. voltmeter, 6 Thompson inclined coil ammeters and voltmeters, Cardew and electrostatic voltmeters, Kelvin ampere balance, Siemens electro-dynamometer, Stanley hot wire ammeter.

Miscellaneous—Two Schaeffer & Budenberg tachometers, leading types of lightning arresters, fuse testing apparatus.

The dark room contains a complete outfit for high potential, high frequency and X-ray work, and a Deshler-McAllister central station type photometer, with rotating stand for incandescent lamp testing.

COLLEGE POWER AND LIGHT PLANT.—The machinery in the dynamo laboratory is driven by the 50 horse power engine or two 20 horse power motors. Steam and electric power for these is furnished by the power plant situated in a neighboring building. This plant consists of an 85 horse power Corliss engine, driving a 40 kilowatt Westinghouse generator and a 30 kilowatt G. E. Co.'s multipolar generator. This station furnishes power to 20 motors, ranging from 3 to 30 horse power. These motors are used at different points on the College property for a variety of purposes, such as pumping water, driving agricultural machinery, supplying power

for machine shop, wood shop, textile department, etc. Several of these are at a considerable distance from the power station, thus furnishing examples of electrical transmission of power. Two of these, 7 horse power each, were built by students. In addition to power for driving motors, the same generators furnish electricity for lighting the barracks and other College buildings. Students have access to this plant, and are thus enabled to see the practical workings of a combined electric light and power plant, and to test its efficiency.

Mechanical Engineering

This laboratory occupies a room 41 by 45 feet, and contains the following equipment:

For Steam Engineering—15 horse-power horizontal, locomotive type boiler; 6 horse-power vertical boiler; Erie 6 horse-power plain slide-valve steam engine; 6 horse-power vertical steam engine built in the shops; Payne 15 horse-power high speed automatic engine; Corliss cross-compound condensing steam engine arranged so that either side may be run condensing or non-condensing and each side independent of the other; Wheeler surface condenser with combined air and circulating pumps; set of steam-gauge testing apparatus; Carpenter's separating steam calorimeter; two throttling steam calorimeters; five steam engine indicators of various makes; two standard injectors.

For Hydraulic Engineering—two hydraulic rams; Pelton water motor; power triplex pump; three duplex pumps of different makes; three weirs; recording altitude gauge; 6 pressure and altitude gauges.

For Compressed Air—Clayton air compressor with jacketed cylinders; improved air motor.

For Fuel and Lubricants—Carpenter's fuel calorimeter,

with scales, balances, and oxygen generating devices ; standard viscometer.

For Testing Building Materials—100,000-pound Olsen automatic vertical testing machine driven by 5-horse power Westinghouse electric motor, and fitted for tension, compression, and transverse testing ; Fairbank's cement testing machine ; 3,000-pound transverse testing machine. The laboratory also contains a 5-horse power Otto gasoline engine, an Ericsson hot-air engine, a 6-horse power transmission dynamometer, graduated to read horse power direct and built by students, and an assortment of standard thermometers, weights and measures. The apparatus is so arranged that any of it may be used for separate or combined tests, or for any original investigations. Besides the equipment in this room, the electric light and power plant, the heating plant of the College and barracks, the isolated plants at the dairy, horticultural grounds and pumping station are available for instructional purposes.

Physics

The physical lecture room and laboratory is situated in the main College building, is 33 by 60 feet, and is well equipped with apparatus for both the lecture and experimental work of a general course in physics.

Drawing and Designing

The drawing rooms occupy the entire third floor of the Mechanical Engineering building. The third and fourth floors of the tower are also used as a dark room and blue-print room respectively. A good selection of drawings and models in these rooms are of great benefit to the student in his work. These rooms are equipped to accommodate from 25 to 35 students at a time, with cases, boards and T-squares for over 200. Students in the freshman class are allowed the use of

the necessary instruments and apparatus free of charge. Members of the sophomore, junior and senior classes are required to furnish their own drawing instruments. All instruments used by students must be approved by the instructor in charge; an inferior grade of instruments will not be acceptable. Students are advised to buy their instruments at the Cadet Exchange, where samples can be seen and wholesale prices obtained.

Forge and Foundry

FORGE SHOP.—This is a room 37 by 60 feet, situated in a wing of the Mechanical building. It is equipped with 18 Buffalo down draft forges and steel-faced anvils, with sets of hammers, tongs, swages, fullers, flatters, etc. Continuous blast is furnished by a Buffalo blower driven by a 15 H. P. electric motor, the down draft being produced by a 60-inch Buffalo exhaust fan. The shop is also supplied with vises, swage blocks, emery wheel, bending cone, drill-press, bolt shear, etc.

FOUNDRI.—This building occupies a space 43 by 76 feet and is free from posts or other obstructions. It is equipped with a 26-inch Victor Collian cupola, a Millett's core oven, a two-ton post crane, 8 improved molder's benches, an 18-inch brass furnace, with its usual complement of crucibles, tongs, etc., full set of molder's tools for the accommodation of 20 students, besides the usual accessories to the foundry, such as ladles, flasks, etc.

Machine Shop

The machine shop is located in the southwest wing of the Mechanical building, which wing is 45 by 100 feet, well lighted, heated and ventilated.

It contains seventeen benches, with vises, 105 kits of tools and the following machine tools: 1 18-in.x12-foot engine

lathe; 1 18-in.x8-foot engine lathe; 3 14-in.x6-foot engine lathes; 4 14-in.x6-foot Lodge & Shipley lathes; 2 14-in.x6-foot F. E. Reed compound rest engine lathes; 2 14-in.x6-foot Hendey compound rest engine lathes; 1 10-in.x4-foot F. E. Reed pattern maker's lathe; 1 15-in.x8-foot speed lathe; 1 18-in. drill press; 1 28-in. back geared drill press; 1 22-in.x6-foot Powell planer; 1 Cincinnati cutter and tool grinder; 1 15-in. Gould and Eberhardt crank shaper; 1 dry emery grinder; 1 12-in. power hack saw; 1 36-in. grind-stone; 1 22-in. Leland and Faulconer wet emery tool grinder; 1 American twist drill grinder; 1 10-in. slotting machine, built by New Haven Mfg. Co.; 1 fan; 1 forge. The tool room in connection with the shop contains all tools, etc., necessary for use with the machines.

The 7 H. P. motor which drives the machinery was built by students.

Woodwork

The wood shop occupies the two-story wing on the east side of the Mechanical Engineering building, 45 by 100 feet. The lower floor contains the freshman class room, equipped with fifteen work benches and sets of tools, six turning lathes, with tools for each, and other tools for hand work. On this floor is also the planing mill machinery, consisting of a double roll planer, power rip and cut-off saws, band saw, scroll saw, 16-inch jointer, moulding machine, mortising machine, tenoning machine, emery grinder, lathe with 12-foot bed, etc.

The upper floor is devoted to the work for the sophomore class, and is fitted up with fifteen work-benches and ninety sets of tools—one set for each student; six 10-in. turning lathes, large pattern lathe, combination saw and boring machine, double head shaper, panelling machine, carving machine, jig-saw, universal trimming machine, special door and sash clamps, steam glue pots, miter cutters, etc. The power is supplied by electric motors conveniently located in the vari-

ous rooms. A large lumber yard and dry-kiln provide seasoned lumber at all times.

Chemical Department

The original Chemical Laboratory is a two-story brick building, 50 by 80 feet, covered with slate and finished inside with southern pine. Overlapping this at one corner, and connected with it by a glass-enclosed passage, is a new and somewhat similar building, 53 by 86 feet, of modern style and handsome design. This double building, which is well ventilated, heated by steam, and lighted by electricity, constitutes a commodious structure adequate to all the needs of the department.

On the first floor of the old building, which is used for academic work, there are five rooms. Two of these, connecting with each other, are employed as a laboratory for the agricultural seniors. Of the other rooms on this floor, one is a laboratory for post-graduate students and one a balance room, while the third is reserved for such use as the ever increasing demands upon the department may require.

On the second floor of this building, there are two large laboratories, one for the juniors in analytical chemistry, the other for the sophomores in general chemistry. A third and smaller room is used as a balance room.

The junior laboratory will accommodate seventy-two students, thirty-six at a time; the sophomore laboratory, one hundred and twenty students, sixty at a time. The laboratories are all provided with hoods for carrying off noxious gases, convenient working tables, water, gas, electric lights, and all necessary appliances for experimental work.

The basement of the building is used for assaying, for the preparation of distilled water and for storage. The air pump and the mixer of the gas machine for supplying the labora-

tories with gas are placed in this basement and connected with the generator, which is in a brick vault eighty-five feet from the building.

On the first floor of the new building there are nine rooms, all of which are appropriated to the chemical work of the State and of the Experiment Station. On one side of the wide hall, which extends the entire length of the building, are the rooms for the analysis of fertilizers. Three of these rooms are used respectively for the determination of phosphoric acid, nitrogen and potash; the fourth as a balance room; the fifth and last as a sample room. On the other side of the hall there are four rooms. The largest of these is used for the agricultural analysis of the Experiment Station. Adjoining this is a balance room, in which provision is made also for the optical and electrolytic apparatus. Of the remaining rooms, one is used for water analysis, the other as an office.

On the second floor of this building there are seven rooms; a lecture room, and six smaller rooms which are used for recitations, cabinets, apparatus, chemicals, library and professor's laboratory.

The lecture room will seat one hundred and seventy students, the seats being arranged in tiers.

The hoods in this building are all connected by earthenware pipes with a tightly-built room just under the roof, over which there is a large ventilator.

The rooms in the basement are used for assaying ores, for the preparation of agricultural products for analysis, and for storage. An electric motor located in one of these rooms supplies the power which drives the machinery for grinding and pulping samples of vegetable substances.



CHEMICAL BUILDINGS

Department of Textile Industry

The building is a brick structure of modern cotton mill design, 167 by 75. It is of the slow burning type, built according to fire insurance regulations, after plans of an experienced mill engineer. The building, although designed for educational and experimental purposes, containing offices, lecture rooms and laboratories, retains the more prominent features of a typical southern cotton mill. This affords the student an opportunity of observing many points of valuable information in connection with mill construction, along with the manipulation of cotton fibres and the study of cotton mill processes and operations.

The first floor is occupied by the carding and spinning machinery, a lecture room, the main office, an exhibit room and the departmental library. The machinery on this floor is driven by two electric motors, one a 22 K. W. 220 volt direct current Westinghouse motor, driving the carding machinery, and a 15 K. W. 220 volt direct current General Electric Co. motor, driving the spinning machinery.

The second floor is occupied by the experimental dyeing laboratory, hand looms, power looms, and a lecture room and two offices. The power machinery on this floor is driven by a 15 K. W. 220 volt direct current General Electric Co. motor.

The basement, which is situated under the right hand half of building, is occupied by the dye-house, and is nicely equipped for that purpose.

The building is equipped with a system of "Vortex" humidifiers from the American Moistening Co.; steam heating system and automatic fire sprinklers from The D. A. Tompkins Company; shafting, pulleys and hangers, from Jones and Laughlin, Ltd., and from T. B. Wood's Sons.

Carding Division

Pickers—One Atherton automatic feeder; one Atherton combination breaker and finisher lapper, with evener motion.

Cards—One Saco & Pettee 40-in. revolving top flat card; one Mason 40-in. revolving top flat card; two traverse wheel grinders; two drum traverse grinders; stripping and burnishing rolls; two complete sets of carder's tools.

Combing—One Mason sliver lap machine; one Mason ribbon lap machine; one Mason six-head combing machine.

Railway Heads—One Saco & Pattee railway head, with evener motion, stop motions, and metallic rolls; one Mason railway head, with evener motion, stop motions, and metallic rolls.

Drawing—One Saco & Pettee drawing frame, 4 deliveries, stop motions, and metallic rolls; one Mason drawing frame, 4 deliveries, stop motions, and metallic rolls.

Fly Frames—One Saco & Pettee 12-in.x6-in. 40 spindle slubber, with latest differential motion; one Saco & Pettee 8-in.x4-in. 60 spindle intermediate roving frame, with latest differential motion; one Saco & Pettee 7-in.x3 1-2-in. 80 spindle fine roving frame, with latest differential motion; one Woonsocket 6-in.x2½-in., 96 spindle jack roving frame, with Daly's improved differential motion.

Spinning Division

Ring Spinning—One Saco & Pettee combination warp and filling ring spinning frame, 128 spindles; one Mason combination warp and filling ring spinning frame, 112 spindles; two Fales & Jenks combination warp and filling ring spinning frames, 80 spindles each, designed for spinning fine counts.

Mule Spinning—One Mason self-acting spinning mule, 120 spindles, 1 3-4-in. gauge, with all latest improvements.

Spooling—One Draper spooler, 40 spindles; one Saco & Pettee spooler, 72 spindles; one Barber & Colman knotter.

Twisting—One Draper combination wet and dry twister, 48 spindles; one Fales & Jenks wet twister, combination filling and taper top wind, 70 spindles.

Winding—One W. W. Altemus & Son bobbin winder; one Atwood-Morrison Co. bobbin winder; one Geo. W. Payne & Co. skein winder; one Universal cone and tube winder.

Reeling—One D. A. Tompkins Co. adjustable reel, 50 spindles.

Warping—One Draper warper with creel.

Beaming—One Entwistle beaming machine.

The divisions of carding and spinning are well equipped with all necessary supplies, such as doff boxes, roving cans, bobbins, spools, cops, cones, tubes and change gears for all machines.

Weaving Division

Hand Looms—Seventeen hand looms, with 4x4 box motion, and 30 harness shedding engines, arranged for four beam work.

Power Looms—One 40-in. Northrop cam loom, with warp stop motion and automatic filling magazine; one 28-in. Northrop cam loom, with warp stop motion and automatic filling magazine also fitted with Stafford 20 harness dobby; one Mason 36-in. gingham loom, with 4x1 box motion; one Mason 40-in. loom, with 1x1 box motion, with Stafford 20 harness dobby also arranged for center selvage motion; one Mason 44-in. fancy cotton loom, with 24 harness dobby; one Stafford 30-in. fancy cotton loom, with 20 harness dobby and

leno attachment; one Stafford 30-in. dress goods loom, with Stafford 400 hook, single lift, swing cylinder, jacquard; one Knowles 40-in. fancy "Gem" loom, with 30 harness dobby, 4x4 box motion; one Crompton & Knowles 36-in. fancy cotton towel loom; one Crompton 65-in. loom, 4x1 drop box motion, fitted with 624 hook double lift, swing cylinder, jacquard, tied for weaving table damask; one Whitin 40-in. cam loom, arranged to weave up to 6 harness; one Whitin 40-in. fancy cotton loom, fitted with 20 harness dobby; one Kilburn & Lincoln 40-in. loom, 4x1 box motion, arranged for dobby; one Kilburn & Lincoln 40-in. loom, 2x2 drop box motion, arranged for dobby.

Jacquard Card Cutting—One Jno. Royle French index foot power card cutter.

This division is also equipped with one floor stand, fitted with 8 harness dobby and leno attachment, built specially for illustrating leno weaves; one jacquard tying-up frame; warping pegs; beaming frames; drawing-in frames; extra heddles and heddle frames; reeds; change gears, etc.

Division of Textile Chemistry and Dyeing

The work in textile chemistry and dyeing is carried on in an experimental laboratory and a practical dye-house. These are equipped with the necessary apparatus and chemicals for instruction in organic chemistry, scouring, bleaching, dyeing, mercerizing, printing, etc.

The experimental laboratory is fitted with appropriate work-tables furnishing accommodations for sixty-four students working by detachments. Each table is supplied with the necessary arrangements for gas and water, and drawers and lockers in which may be stored apparatus and unfinished experiments.

Dye-house—Nine dye vats, four fitted with copper heating

coils, one fitted for peroxide bleaching; one Schaum & Uhlinger self-balancing hydro-extractor; one steaming and aging box; one mercerizing apparatus for yarn; one calico printing machine; one 20 gal. copper kettle; one set copper measures; one dry closet. Other machinery will be selected and installed, in this division, during the coming year. This division is well equipped with reels, yarn testers, analytical balances, etc., and necessary instruments for experimental purposes.

Departmental Library

For the use of students and instructors, a reading room in the textile building has been fitted up and is furnished with some of the more important books of reference relating to the textile industry, and also with the leading periodicals relating to the subject. New books are being added constantly. The room is open every week day throughout the session.

Civil Engineering

The collection of field instruments contains the following: Two 6-inch vernier compasses; 20-inch wye level; engineer's transit, with solar attachment and stadia; plane-table, with 9-inch telescope, vertical circle and stadia; drainage level; 12-foot self-reading leveling and stadia rod; 12-foot New York leveling rod; 10-foot cross-section rod, graduated; Gurley's clinometer, reading to degrees; two surveyor's chains; engineer's chain; standard 100-foot steel tape, graduated to hundredths of a foot; and full supply of ranging poles, flag poles and other accessories. There are also sets of drawing instruments for office work.

Library

In the main building is a series of rooms specially constructed for the use of the library. There are now upon the

shelves 5,718 volumes, classified under the various heads of literature, history, biography, science, and reference books. In addition to these in the general library, there are 1,493 volumes in Experiment Station and department libraries of the College. There are also about 2,300 government publications, together with about 3,000 pamphlets. The library is supported by an annual appropriation, and the number of books is added to each year.

A students' reading room is maintained in connection with the library.

The Clemson Pictures

A collection of thirty-seven oil paintings, collected by Mr. Clemson, chiefly in Holland, together with a number of additional portraits, may be seen in the President's office in the Main building.

The Calhoun Relics

Several pieces of furniture and other interesting relics, formerly the property of Mr. Calhoun, are carefully preserved in the Calhoun Mansion, where they may be seen by visitors to the College.

DEPARTMENTS OF THE COLLEGE
DETAILED DESCRIPTIONS OF COURSES

Departments of the College

For administrative purposes, the College is divided into seven departments, each presided over by a director, who has general supervision of all the work and interests of his department. The departments comprise the various divisions indicated below, which are in the immediate charge of the professors, associate and assistant professors, and instructors of the respective departments.

Numbers in parentheses refer to descriptions beginning on page 85.

1. Agricultural Department

Agriculture (100-103).

Geology and Mineralogy (110-116).

Horticulture (120-122).

Veterinary Science (130-139).

Zoology and Entomology (140-142).

Dairying and Animal Husbandry (150-162).

Botany and Bacteriology (170-175).

2. Mechanical and Electrical Department

Electrical Engineering (200-203).

Mechanical Engineering (210-215).

Physics (220-222).

Drawing and Designing (230-239).

Forge and Foundry (240, 241).

Machine Shop (250, 251).

Woodwork (260-262).

3. Chemical Department

Chemistry (300-306).

Metallurgy (310, 311).

4. Textile Department

Carding and Spinning (400-409)

Weaving and Designing (410-414).

Textile Chemistry and Dyeing (420, 421).

5. Academic Department

English (500-504).

History and Political Economy (510-515).

Mathematics and Civil Engineering (520-537).

6. Military Department

Military Science and Tactics (600-602).

7. Preparatory Department



AGRICULTURAL HALL

Detailed Descriptions of Courses

Agricultural Department

Professor Newman, Director

General Agriculture

Professor Newman

Assistant Professor Benton

100. Soils, Plants and Animals

FRESHMAN CLASS ; ALL COURSES

This course in elementary principles of agriculture is pursued in all the classes during the first year. The instruction is confined to the application of fundamental principles which do not require a knowledge of the sciences related to agriculture, and embraces a broad foundation for future study.

101. Soil Management and Farm Crops

SOPHOMORE CLASS ; COURSES I., II.

As the student progresses in the study of the natural sciences, the application of these sciences is taught in their relation to the art of agriculture, special stress being placed upon the protection, improvement, fertilization, and all manipulations of the soil in the preparation for planting and in the cultivation of crops.

102. Rural Economy and Soil Physics

JUNIOR CLASS ; COURSE I.

Lectures upon the employment and management of labor, farm equipment, and farm management.

The work in soil physics enables the student to understand the effects of the different methods of treatment of soils, and the influence of these methods upon moisture, texture, aeration, fertility and production. The course is supplemented by laboratory determinations of specific gravity, relative specific gravity, water-holding capacity, capillary power, and rate of percolation of various soils ; experiments

upon rates of evaporation from the surface, and the effects of different mulches and methods of cultivation upon retention of soil moisture; mechanical analysis of soils.

103. Agricultural Research and Literature

SENIOR CLASS; COURSE I.

The senior class will study the results of experiment work, conduct experiments, interpret results, and prepare them in bulletin form. Research in agricultural reports and kindred literature will be required upon assigned subjects, the results to be reported in writing.

The Agricultural Society

Attendance upon the meetings of the College Agricultural Society will be required of all students in the agricultural courses.

Text-books used in Freshman Class: Elements of Agriculture, by J. B. McBryde; Principles of Agriculture, by L. H. Bailey.

Reference-books: Voorhees' First Principles of Agriculture, Storer's Agriculture, Experiment Station Bulletins, Leading Periodicals.

For descriptions of buildings and equipment, see pages 58 and 63.

Geology and Mineralogy

Professor Lewis

110. Elementary Mineralogy

JUNIOR CLASS; COURSE V.

Laboratory study of crystal forms by the use of models and natural crystals; chemical and physical properties of minerals; practice in the determination of unknown specimens. This is a brief course, intended to give the student an adequate conception of the science of mineralogy together with some practical acquaintance with the more common and important minerals.

111. Mineralogy

JUNIOR CLASS; COURSE III.

A comprehensive course in crystallography, physical and chemical mineralogy, and systematic descriptive and determinative mineralogy. Crystallography is taught by lectures and text-book, with laboratory

work on the collections of models and natural crystals; also physical, optical, and chemical properties of minerals, and descriptive mineralogy, covering the more important mineral species. Much of the laboratory work is devoted to the determination of minerals by means of their physical and chemical properties, by comparison with labeled specimens of the systematic collection, and by the use of unlabeled collections for practise in identifying minerals at sight. This course gives a sufficient knowledge of mineralogy for the geologist, metallurgist, mining engineer, or chemist. and will enable the student to readily identify all but the rarer minerals.

112. Elementary Geology

SENIOR CLASS; COURSES I., II., IV., V.

The elements of dynamical, structural, and historical geology. The influences of geologic phenomena on man are emphasized, particularly in the study of rock-decomposition and the formation of soils, the processes of erosion and deposition, and the resultant topographic forms.

113. General Geology

JUNIOR CLASS; COURSE III.

A broad course in the elements of general geology. Special stress is laid on structural and dynamical geology in their relations to the formation of rocks and rock-structures, the metamorphism of rocks, and the deposition of minerals and ores. In historical geology special attention is given to the development of the North American continent.

114. Petrography

SENIOR CLASS; COURSE III.

A study of the structure, composition, origin, and classification of various families of rocks, their distribution, modes of occurrence, and geological importance; microscopic characters of rock-forming minerals, and the use of the petrographic microscope. The course is supplemented by work in the field and laboratory, and the student becomes familiar with rocks and with practical methods of investigation, and their applications to the problems of lithological geology.

115. Economic Geology

SENIOR CLASS; COURSE III.

A general survey of geological products of value, including metallic and non-metallic minerals, and building stones; their origin and nature, distribution, modes of occurrence, and methods of exploitation. The course deals particularly with the economic deposits of North America, with briefer reference to those of other countries for purposes of comparison and for the elucidation of problems of origin, exploitation, etc. The student is required to read and prepare abstracts of the more important monographs and reports.

116. Practical Geology

SENIOR CLASS; COURSE III.

Field study and reports of geological processes and phenomena, rocks and rock-structures, both original and secondary, accompanied by laboratory exercises by means of specimens, models, photographs, maps and sections; interpretation and representation of geologic phenomena, and training in the principles and methods of geological surveying, the construction of geological maps and sections, and the preparation of reports.

For descriptions of equipment, see page 63.

Horticulture

Associate Professor Newman

Instruction is given in the sophomore, junior and senior classes. The theoretical work is illustrated by practical exercises in the garden, orchard, vineyard, greenhouse, and ornamental grounds of the College. These practical exercises enable the student to become familiar with all the details of the work.

120. Propagation and Management of Nursery Stock

SOPHOMORE CLASS; COURSE I. JUNIOR CLASS; COURSE II.

Lectures are given on the following subjects and special attention is paid to the practical work along these lines. Stratification of seeds; sowing seeds; seed testing; separation and division; budding

and grafting; grading and storing nursery stock; nursery management.

Text-book: The Nursery Book, by L. H. Bailey.

121. Vegetable Gardening

JUNIOR CLASS; COURSE I.

Construction of hot-beds and cold-frames, their use and management; preparation of the soil; fertilizing; seed sowing; transplanting and cultivation; gathering; storing and marketing; spraying and spraying equipment.

Text-book: Principles of Vegetable Gardening, by L. H. Bailey.

122. Ornamental Horticulture and Floriculture

SENIOR CLASS; COURSE I.

The work includes ornamental horticulture and floriculture; the propagation and care of ornamental plants; general greenhouse work and management.

For descriptions of buildings, grounds, and equipment, see pages 58 and 59.

Veterinary Science

Associate Professor Nesom

Assistant Shealy

A short course in veterinary science is given as a part of the course in animal industry. The object is to acquaint the students taking this course with the elementary facts and principles of veterinary surgery and medicine, and to make them more intelligent stockmen. The time devoted to the course is not sufficient to make professional veterinarians, but for those who wish to take a course in a regular veterinary college, it will materially shorten the time necessary for graduation.

The course begins with a study of the exterior of the horse and includes instruction in the breeds and types, breeding, care and management of horses and mules. This subject is taken in common during the first term of the sophomore year by the students in agriculture and animal industry. After this the course includes anatomy and physiology of the domestic animals, histology, pathology, materia medica, pharmacy, surgery and the practice of veterinary medicine.

A large part of the course is given as practical work in class room, laboratory and at the clinics. A free clinic is held at the veterinary hospital every Monday afternoon of the session except on holidays and during examinations. These clinics are liberally patronized by the stockmen of the surrounding country, and the material thus secured affords practical work in surgery and the treatment of diseases. Many patients are kept in the hospital for subsequent dressing of wounds and continued treatment. Much time is devoted to the more common diseases of farm animals and as far as possible specimen cases from the hospital are exhibited before the classes during the lectures. When this is not practicable the lectures are illustrated by means of lantern slides. Special attention is given to the contagious diseases that occur in epizootic outbreaks, with treatment, means of suppression and control, and the proper application of sanitary measures, quarantine, inoculation and destruction.

130. The Horse

SOPHOMORE CLASS ; COURSES I., II.

Practical study of the breeds and types of horses and mules, including principles of breeding ; management ; judging by score card and for soundness ; breaking ; biting ; saddling ; gaiting and harnessing.

131. Anatomy and Histology

SOPHOMORE CLASS ; COURSE II.

A laboratory course in gross anatomy, dissection and histology.

Reference-books: Anatomy of the Horse, by J. M. McFadyean ; Manual of General Histology, by Wm. S. Gottheil.

132. Veterinary Physiology

JUNIOR CLASS ; COURSE II.

Text-book: A Manual of Veterinary Physiology, by F. Smith.

133. Materia Medica and Therapeutics

JUNIOR CLASS ; COURSE II.

Text-book: A Compend of Veterinary Materia Medica and Therapeutics, by A. C. Hassloch.

134. Physiologic Chemistry and Microscopy

JUNIOR CLASS; COURSE II.

135. Pathology and Pharmacy

JUNIOR CLASS; COURSE II.

136. Veterinary Surgery and Horseshoeing

SENIOR CLASS; COURSE II.

137. Sporadic Animal Diseases

SENIOR CLASS; COURSE II.

138. Contagious Animal Diseases and Meat Inspection

SENIOR CLASS; COURSE II.

139. Veterinary Clinics

SENIOR CLASS; COURSE II.

For descriptions of buildings and equipment, see pages 59 and 64.

Zoology and Entomology*Associate Professor Chambliss*

The instruction in this division is largely conducted by the laboratory method with lectures and recitations, and is so given as to lead the student to observe and think for himself, as well as to secure a working knowledge of the science for practical purposes.

The elementary instruction in plant and animal life in the first year of the agricultural courses is given in connection with the division of botany and bacteriology, and is described under number 170.

140. Physiology

SOPHOMORE CLASS; COURSES I., II.

An elementary course in which the physiology of digestion, circulation and excretion will receive special attention. The instruction will serve as a basis for hygiene and as an aid to those who may teach in public schools.

141. General Invertebrate Zoology

JUNIOR CLASS ; COURSES I., II.

This course includes a general discussion of groups, and dissection of types, especially of the forms related to insects, and is further extended to lay a foundation for a knowledge of animal development. Animals of economic importance are given special attention.

Books of Reference: Invertebrate Morphology, by McMurrich; The Riverside Natural History; Text-book of Zoology, by Parker and Howell.

142. Economic Entomology

SENIOR CLASS ; COURSES I., II.

By laboratory studies and field work, the students in this course will be made familiar with the most important injurious insects. For the systematic and biological work, a collection of one hundred species, with full notes on the habits of twenty-five, will be required. The practical work will consist of the preparation and application of insecticides.

Text-book: Manual for the Study of Insects, by Comstock; Elements of Insect Anatomy, by Comstock and Kellogg.

Books of Reference: Insects Injurious to Fruits, by Saunders; Economic Entomology, by Smith; Guide to Study of Insects, and a Text-book of Entomology, by Packard; U. S. Government Experiment Station and State publications on entomology.

For description of equipment, see page 65.

Animal Industry and Dairying

Assistant Professor —————

Assistant Rawl

150. Types of Cattle

FRESHMAN CLASS ; COURSES I., II.

Market and breed types of dairy and beef cattle; their origin and history.

151. Cattle Judging

FRESHMAN CLASS ; COURSES I., II.

Judging different breeds of cattle, and score card practice.

152. Types of Sheep and Hogs

SOPHOMORE CLASS; COURSE II.

Breed and market types of sheep and hogs; their origin and history.

153. Principles of Breeding

SOPHOMORE CLASS; COURSE II.

Principles of breeding, including selection; heredity; atavism; variation; fecundity; methods of breeding; in-and-in breeding; line-breeding.

154. Stock Judging

SOPHOMORE CLASS; COURSE II.

Judging fat steers, sheep and hogs, and score card practice.

155. Care and Management of Live Stock

JUNIOR CLASS; COURSE II.

Care and management, housing and feeding live stock.

156. Stock Feeding (Short Course)

SENIOR CLASS; COURSE I.

Stock feeding, including the consideration of the comparative food value and cost of all southern feeding stuffs; economic methods of feeding to produce milk, beef, etc.; and method of feeding work animals.

157. Stock Feeding

SENIOR CLASS; COURSE II.

Stock feeding, including composition and digestibility of feeding stuffs; their preparation, use and cost; nutritive ratios; digestion; etc. The available feed stuffs of the south are discussed at length.

158. Animal Products and By-Products

SENIOR CLASS; COURSE II.

159. Group Judging

SENIOR CLASS ; COURSE II.

Judging groups of animals similar to county and state fair work.

160. Pedigree Work and Compounding Rations

SENIOR CLASS ; COURSE II.

161. Milk and Its Products

JUNIOR CLASS ; COURSES I., II.

The course includes sanitary conditions necessary for production and handling ; general management and marketing ; pasteurization, manufacture, and marketing of cream ; dairy machinery ; and milk testing.

162. Practical Work in Creamery

JUNIOR CLASS ; COURSES I., II.

Cream separation and ripening ; pasteurization of milk and cream ; bottling milk ; butter and cheese making ; milk testing ; butter and cheese scoring.

For description of buildings and equipment, see pages 59 and 65.

Botany and Bacteriology*Associate Professor Metcalf***170. Plant and Animal Life**

FRESHMAN CLASS ; COURSES I., II.

A preliminary and general practical survey of the biological principles upon which agriculture is based. The course is given in connection with the division of Zoology and Entomology.

171. General Botany

SOPHOMORE AND JUNIOR CLASSES ; COURSE I.

The flowering plants are first studied and especial attention given to plant physiology ; afterward a rapid survey of the whole plant kingdom is made by a study of types. Considerable attention is given

to acquiring the ability to name plants, especially those of economic importance. While the work is necessarily very general, it serves to show the bearing of the results of modern botanical research on the problems underlying the cultivation of plants.

172. Elements of Forestry

SENIOR CLASS ; COURSE I.

173. General Bacteriology

SENIOR CLASS ; COURSES I., II.

The nature and distribution of bacteria, the facts underlying the phenomena of decay and disease, the hygiene of contagious diseases, the elaborate technique of practical work in the science, form the subject matter of the course.

174. Plant Pathology

SENIOR CLASS ; COURSE I.

The course is devoted to the study of the diseases of economic plants. The class first studies pear blight as a typical disease, producing the disease by inoculation and watching its progress and effects. Other diseases induced by plant parasites are then studied from the systematic standpoint of the parasite. The students are taught to recognize the more common diseases, particularly in the early stages ; and the whole question of prevention and practicable remedies is fully discussed.

175. Bacterial Diseases of Animals

SENIOR CLASS ; COURSE II.

A study of animal diseases corresponding to No. 174 above, with the detailed study of anthrax as a type disease.

For descriptions of equipment, see page 66.

Mechanical and Electrical Department

Professor Riggs, Director

Electrical Engineering

Professor Riggs

Assistant Professor Kyser

200. Electricity and Magnetism

JUNIOR CLASS; COURSE IV.

Study of the principles of electricity and magnetism, and the elementary design of electro-magnetic mechanism. Wiring calculations, incandescent lighting, etc.

Text-books: Elementary Lessons in Electricity and Magnetism, by Thompson; Elementary Electricity and Magnetism, by Jackson.

201. Electrical Laboratory Practice

JUNIOR CLASS; COURSE IV.

Experimental verification of fundamental electrical laws; measurement of currents, electromotive force, resistance, permeability, capacity, etc.

Reference books: Ayrton's Practical Electricity; Nichol's Physics, Vol. I.; Stewart and Gee's Practical Physics; Henderson's Practical Electricity and Magnetism, Vols. I. and II.

202. Dynamo Electric Machinery

SENIOR CLASS; COURSE IV.

First half session: study and design of direct current dynamo-electric machinery. Second half session: study of alternating currents and their application to light and power. Special attention is directed to polyphase systems and apparatus.

Text-books: Thompson's Dynamo-Electric Machinery; Franklin's Alternating Currents and Alternating Current Machinery; Sheldon's Alternating Current Machines.

NOTE.—A complete dynamo design, with full set of drawings, is required as part of course 202 in Electrical Engineering, and course 238 in Mechanical Drawing.



203. Electrical Laboratory

SENIOR CLASS; COURSE IV.

Care, management and testing of arc and incandescent generators, direct current arc lamps, motors, etc. During third term management and test of single and polyphase machinery and apparatus.

For descriptions of buildings and equipment, see pages 60 and 66.

Mechanical Engineering

Associate Professor Earle

In this course the student is taught the application of his scientific, mathematical and technical knowledge to the design and construction of engineering structures, and of machinery and manufacturing plants in general.

210. Mechanism

JUNIOR CLASS; COURSES III., IV., V., VI.

Spur, bevel, and screw gearing, belt gearing; lobed and elliptic wheels; epicyclic trains; escapements; ratchet motions; link motions; quick return motions; cam motions.

Text-book: Stahl and Wood's Mechanism.

211. Mechanics

JUNIOR CLASS; COURSES III., IV., V., VI.

Motion, force, velocity, work, energy, power, stress, strain, elasticity, resilience, moments of force, centre of gravity, moments of inertia, momentum, hydrostatics.

Text-book: Maurer's Technical Mechanics.

212. Mechanics

SENIOR CLASS; COURSES IV., V.

Two hours per week during the first two terms are given to the study of pure mechanics, strength of engineering materials and hydraulics.

203. Electrical Laboratory

SENIOR CLASS; COURSE IV.

Care, management and testing of arc and incandescent generators, direct current arc lamps, motors, etc. During third term management and test of single and polyphase machinery and apparatus.

For descriptions of buildings and equipment, see pages 60 and 66.

Mechanical Engineering

Associate Professor Earle

In this course the student is taught the application of his scientific, mathematical and technical knowledge to the design and construction of engineering structures, and of machinery and manufacturing plants in general.

210. Mechanism

JUNIOR CLASS; COURSES III., IV., V., VI.

Spur, bevel, and screw gearing, belt gearing; lobed and elliptic wheels; epicyclic trains; escapements; ratchet motions; link motions; quick return motions; cam motions.

Text-book: Stahl and Wood's Mechanism.

211. Mechanics

JUNIOR CLASS; COURSES III., IV., V., VI.

Motion, force, velocity, work, energy, power, stress, strain, elasticity, resilience, moments of force, centre of gravity, moments of inertia, momentum, hydrostatics.

Text-book: Maurer's Technical Mechanics.

212. Mechanics

SENIOR CLASS; COURSES IV., V.

Two hours per week during the first two terms are given to the study of pure mechanics, strength of engineering materials and hydraulics.

213. Mechanical Engineering

SENIOR CLASS; COURSES III., IV., V., VI.

Study of the design and construction of steam boilers, heaters, pumps and injectors; theory and design of simple, compound and triple expansion steam engines; gas and gasoline engines; hot air engines; air compressors and motors; ice and refrigerating machinery; heating and ventilating systems; transmission of power; engineering specifications and the law of contracts. Theory of the strength of engineering materials. Graphical solution of problems. Hydraulics.

214. Mechanical Laboratory

SENIOR CLASS; COURSES IV., V.

Study, use and calibration of water-meters, weirs, steam gages, indicators, dynamometers, calorimeters; efficiency tests of screw-jacks and hoists; tests of fuel and lubricants; tests of building materials, as iron, wood, brick, cement, etc.; erecting, lining up and setting the valves of the plain slide-valve and automatic cut-off steam engines; indicator practice; horse-power and efficiency of steam, gasoline and hot-air engines and air-compressors and motors; efficiency trials of steam boilers; duty trial of steam pump and of College pumping engines.

215. Mechanical Laboratory

SENIOR CLASS; COURSES III., VI.

Study, use, and calibration of steam gages; indicators; calorimeters; tests of building materials, as iron, wood, brick, cement; erecting, lining up and setting the valves of plain slide-valve and automatic cut-off engines. Practice in running and testing water motors; steam engines; gasoline engines; pumps; firing and testing of steam boilers.

Reference Books: Carpenter's Experimental Engineering; Smart's Engineering Laboratory Practice; Thurston's Steam Engine.

For descriptions of equipment, see page 69.

Physics

Associate Professor Poats

The study of physics is begun in the sophomore year by all regular students, and completed in that year by those students taking courses in agriculture, and textile industry. All other regular students take physics, both theoretical and practical, in the junior year.

The instruction is by lectures and recitations, special stress being laid upon those principles and facts which are fundamental to the several engineering professions. The lectures and recitations are illustrated by numerous experiments before the class.

In the physical laboratory the student is taught to perform for himself all the experiments of a general laboratory course. The properties of matter, the laws of mechanics, heat, electricity, magnetism, light and sound are verified. Students are required to make accurate and neatly written reports of all experiments.

220. Elementary Physics

SOPHOMORE CLASS; ALL COURSES.

Properties of matter; physical measurements; mechanics of solids and fluids; electricity and magnetism.

Text-book: Carhart and Chute's Physics.

221. Electricity and Magnetism; Heat, Sound and Light

JUNIOR CLASS; COURSES III., IV., V.

Text-book: Carhart and Chute's Physics; Carhart's University Physics.

222. Physical Laboratory

JUNIOR CLASS; COURSES III., IV., V.

Experimental determination of the physical properties of matter and the verification of laws of mechanics; heat; sound; light; electricity and magnetism.

For description of equipment, see page 70.

Drawing and Designing

Associate Professor Lee

Assistant Professor Klugh

Instructor Dargan

Throughout the course the best methods of work pursued in the drawing rooms of workshops and manufacturing establishments are given.

230. Freehand Drawing

FRESHMAN CLASS; COURSES III., IV., V., VI.

Graded exercises in sketching from geometrical models, plaster casts, machine parts, and other objects in pencil and ink, particular attention being paid to outlines and perspective.

231. Freehand Drawing

FRESHMAN CLASS; COURSES I., II.

Same as course 230, except that botanical and entomological specimens are substituted for machine parts.

232. Mechanical Drawing

FRESHMAN CLASS; COURSES III., IV., V., VI.

Exercises in the use of drawing instruments; lettering; geometrical problems; projections; conventional section and shade lines; working drawings of simple parts of machines, from sketches and models.

233. Mechanical Drawing

FRESHMAN CLASS; COURSES I., II.

Exercises in the use of drawing instruments; lettering; geometrical problems; projections; plans and elevations of farm buildings.

234. Mechanical Drawing

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Orthographic projection; intersection and development of surfaces;

isometric drawing; perspective; shades and shadows; working drawings of machines or parts of machines from sketches and specifications. Elementary principles of machine design; construction of screw threads; proportioning of bolts and nuts.

235. Mechanical Drawing

JUNIOR CLASS; COURSE IV.

Working drawings of machines from sketches and specifications. Elementary principles of design, continued; riveting; coupling; belt gearing; gear teeth, etc.; tinting; tracing and blue printing.

236. Mechanical Drawing

JUNIOR CLASS; COURSE V.

Plotting; topographical drawing; tinting; railroad and map drawing; plans and details of buildings.

237. Mechanical Drawing

JUNIOR CLASS; COURSE III.

First half same as course 236. Second half, drawing of furnace designs and other metallurgical appliances.

238. Machine Design

SENIOR CLASS; COURSES IV., VI.

Toothed gearing, cams, and details of steam engine and electrical machinery. Design drawing required in graduation thesis.

239. Mechanical Drawing

SENIOR CLASS; COURSE V.

Railroad and map drawing; plans and details of bridges and buildings. Design drawing required in graduation thesis.

Reference Books: Mechanical Drawing, by Anthony; Mechanical Drawing and Elementary Machine Design, by J. S. and D. Reid; Machine Drawing and Design, by Low and Bevis; Machine Design, by Unwin; Lettering, by C. W. Reinhardt; Plain Lettering, by Henry S. Jacoby; and Lettering, by C. E. Sherman.

For description of equipment, see page 70.

Forge and Foundry

Assistant Professor Johnson

*Assistant Professor Griswold**

Assistant Gantt

240. Forge Work

FRESHMAN CLASS ; ALL COURSES.

Study of Buffalo down draft forges ; graduated exercises, embracing fundamental operations of forging, such as upsetting, bending, punching, twisting, welding, etc. Part of third term is devoted to working with tool steel, involving processes of annealing, hardening, tempering, etc.

241. Foundry Work

SOPHOMORE CLASS ; COURSES III., IV., V., VI.

Names and uses of molders tools ; tempering and working of molding sand ; making and patching of molds. Work with patterns of various shapes and sizes, illustrating the principles of venting, gating, coring, etc. Grading and mixing of iron ; charging and operating cupola. Several weeks are devoted to work in brass molding. During the last six weeks of the term, the practical instruction is supplemented by a course of lectures covering the various phases of foundry work, including the metallurgy of foundry metals.

For description of equipment, see page 71.

Machine Shop

Assistant Professor Wright

250. Machine Shop

JUNIOR CLASS ; COURSES IV., V., VI.

Instruction begins at the bench with exercises in chipping, filing, scraping and polishing. Castings and drawings are given the student, and he is required to chip, file, scrape and polish

*In place of Professor Johnson, who was absent on leave during the session of 1903-1904.

each casting into the exact form and size represented by the corresponding drawing. From bench work the student is advanced to machine work, where he is taught turning, boring, polishing, drilling, threading, planing, milling, grinding, etc., in iron, brass and steel. In all cases the exercises are required to be worked to drawings. The graded course of exercises is designed to teach the fundamental principles and practices of machine metal-work from the simplest to the most difficult operations.

Only a few set exercises are given to teach important fundamental processes. It is the policy of the shop to keep several large machines in process of construction, requiring the students to do the work. Experience has taught that students take greater interest in making parts of a machine that is for actual use than in mere routine exercise work.

251. Machine Shop

SENIOR CLASS ; COURSE IV.

The senior year is devoted to more advanced work in the construction of engines, dynamos, motors and other machines. The student is encouraged to work from his own designs as far as possible, but is guided and directed by the instructor in charge.

For description of equipment, see page 71.

Woodwork

Assistant Professor Hook

Assistant Gantt

The course in woodwork does not aim to make the student a skilled workman, but rather to teach the proper use of tools and impress the importance of working to exact dimensions. At the same time, it gives a certain amount of manual dexterity, useful in every vocation.

The course covers two years, beginning with the most elementary principles and advancing gradually by a series of graded exercises to the more complicated constructions where special methods and tools are required. All work is done from working drawings, and commercial shop methods are constantly employed.

260. Woodwork

FRESHMAN CLASS; COURSES III., IV., V., VI.

Use and care of tools; graded exercises in carpentry, joining, wood-turning; construction of articles from working drawings; use of turning lathe and other simple machinery; construction of boxes, desks, etc., involving dove-tailing, gluing, polishing, etc.

261. Woodwork

FRESHMAN CLASS; COURSES I., II.

Same as course 260, except that for wood-turning is substituted a study of farm structures, such as fences, gates, houses, etc.

262. Woodwork—Pattern Making

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Use of wood-working machinery, as plainer, jointer, moulder, mortice and tenoning machine, carving and paneling machine, shaper, circular and jig-saws. Pattern work, with graded exercises, illustrating the principles of draft and shrinkage, and teaching the construction of core prints, core boxes, etc. Patterns for machines under construction. Cabinet work, and furniture construction, as chairs, desks, book-cases, hall stands, etc.

For description of equipment, see page 72.

Chemical Department

Professor Hardin, Director

Chemistry and Metallurgy

*Professor Hardin**Associate Professor Brackett**Assistant Professor Shiver**Instructor Henry***300. General Chemistry**

SOPHOMORE CLASS; ALL COURSES

Inorganic chemistry and the leading facts and principles of organic chemistry. 1st term, non-metals; 2d term, metals; 3d term, organic chemistry.

Text-book: Roscoe's Elementary Chemistry.

301. Chemical Laboratory

SOPHOMORE CLASS; ALL COURSES

Introductory work and qualitative analysis.

Text-book: Jones' Junior course in Practical Chemistry.

302. Industrial Chemistry

JUNIOR CLASS; COURSES I., II., III.

The applications of chemistry in the more important arts and manufactures. Among the subjects studied are: Sulphuric acid; soda; chlorine; potash salts; fertilizers; lime, mortar, and cements; glass; porcelain; illuminating gas; coal tar; mineral oils; vegetable and animal oils; soap; fermentation industries; etc.

Text-book: Thorp's Outlines of Industrial Chemistry.

303. Chemical Laboratory

JUNIOR CLASS; COURSES I., II., III., VI.

Qualitative and quantitative analysis. A short course in assaying is given in the agricultural courses, and a fuller course in assaying in the metallurgical course.

Books used: Jones' Junior Course in Practical Chemistry; Fresenius' Qualitative and Quantitative Analysis; Notes on Assaying.

304. Agricultural Chemistry

SENIOR CLASS; COURSES I., II.

The composition of plants, the sources of plant food, the composition of soils, the improvement of soils by chemical means, the composition and manufacture of fertilizers, the composition of feeding-stuffs and of dairy products.

Text-books: Johnston's Elements of Agricultural Chemistry, edited by Cameron and Aikman.

305. Chemical Laboratory

SENIOR CLASS; COURSES I., II.

Quantitative analysis of fertilizers, soils, ashes of plants, water, cattle-foods and dairy products.

Books used: Bulletins of U. S. Department of Agriculture, containing methods of analysis adopted by the Association of Official Agricultural Chemists.

306. Physical Chemistry; History of Chemistry

SENIOR CLASS; COURSE III.

310. Metallurgy

SENIOR CLASS; COURSE III.

311. Chemical and Metallurgical Laboratory

SENIOR CLASS; COURSE III.

For descriptions of buildings and equipment, see pages 61 and 73.

Department of Textile Industry*Professor Beaty, Director***Details of Instruction**

In carding and spinning, after the subject of raw material has been completed, machinery and processes used in the production of cotton yarns will be taken up systematically, going into a detailed examination and explanation of the separate machines and the mechanisms peculiar to them. Calculations for making changes of gears, speeds, production, etc., and practical operation of each machine will be required.

In designing, instruction begins with explanations of the principles of representing weaves on design paper, after which the designing of plain simple weaves, laying out of harness drafts, pegging plans, etc., are taken up, advancing into the designing of more complicated weaves usually made on harness. After the completion of harness weaves the time will be devoted to designing of Jacquard weaves and tying-up of Jacquards. The aim of the instruction in designing will be to develop originality in the student.

The practical work in weaving is laid out to parallel the instruction in designing. The first part of the instruction in this work will be on hand looms. After the completion of that amount of work required on hand looms the student is advanced to plain and fancy power looms, where in addition to the practical operation of weaving, the loom will be analyzed and explained in detail, together with timing and setting all working parts. The latter part of this work will be on Jacquards.



TEXTILE BUILDING

Cloth analysis consists in dissecting samples of various kinds of cloth to ascertain the weave, texture, weight per yard and the counts of yarn used in its construction. The students are required to reproduce some of these patterns on the looms in the school.

The work in textile chemistry and dyeing covers inorganic quantitative analysis; the general principles of organic chemistry, with special reference to the coloring matters; the preparation of mordants and dyes, and the application of them to the several textile fibres.

Care is taken to develop accuracy in observation, neatness and clearness in written reports; and to this end each student is required to submit a comprehensive report—including the necessary notes and references from standard works on the subject—of every experiment performed by him. By this method each student is able to verify for himself in the laboratory, the truth of the principle stated to him in the class room.

Each student will be required to submit an organization and a list of the machinery equipment, for several different sizes of mills, making different classes of products.

In all the divisions of this department, the lecture work, so far as is necessary, will be illustrated with drawings and lantern slides.

Carding and Spinning

Professor Beaty

Instructor Parker

400. Raw Material

JUNIOR CLASS; COURSE VI.

That the manipulation of cotton fibres may be carried out successfully, under various conditions, it is essential that the characteristics peculiar to the cotton fibre should be understood. Therefore, the introductory work of the students of this department is to examine the physical properties of cotton fibres, to ascertain their lengths of staple, spinning qualities, color, harshness and softness, and to determine their suitability for making various kinds of yarn, filling, warp, ply yarns, etc. This study of fibres will not be limited to American cottons, but will include the more important commercial cottons of the world. The effects of temperature and humidity on fibres will be fully discussed. Also the handling of cotton, prior to manufacturing processes, together with the injury to cotton fibres therefrom.

401. Opening and Mixing

JUNIOR CLASS ; COURSE VI.

Beneficial effects of opening and airing cotton ; length of time to air for best results ; effects on resultant yarn if not properly opened ; necessity of mixing ; when to mix cottons and methods of carrying out same ; effects of improper mixing ; effects of a judicious mixing on the after processes of manufacture ; reasons for blending ; effects of blending cottons on the resultant yarn, for strength, appearance, cost, etc. ; effects on finished products if cottons are not properly mixed or blended.

402. Picker Room

JUNIOR CLASS ; COURSE VI.

Proper situation of picker room ; arrangement of machinery in same ; automatic feeder ; purpose for which used ; construction, adjustment of parts, etc. ; action on cotton ; manner of connecting them to breaker lappers with and without dust trunks ; advantages of dust trunk ; facilitating good results by proper care ; breaker lapper, use, explanation of parts, beaters used, adjustment of working parts and experimenting with different speeds of beater ; intermediate and finisher lappers, necessity of using same, construction, speeds, care of beaters, kinds of beaters, speeds of beaters for different lengths of staple ; evener motion and its control of feed rolls ; adjustment of grids to regulate amount of waste, disposition of waste ; regulation of air current ; effects of air current on proper working of the lapper ; lap formation ; calculation on above machines for drafts, length of lap, etc.

403. Carding

JUNIOR CLASS ; COURSE VI.

Purpose of carding ; principle upon which cards are built ; comparison of types of cards ; explanation of purpose and construction of feed plate, licker-in, cylinder, flats, screens, doffer, coiler head, etc. ; different settings of card to produce best results on different lengths and qualities of fibre ; regulation of waste ; amount of draft ; grinding ; effects of improper grinding on card clothing and fibre ; calculations for changing gears and speeds of various working parts.

404. Railway Heads and Drawing Frames

JUNIOR CLASS; COURSE VI.

Purpose, use, construction, advantages and disadvantages of railway heads; explanation of stop motions, evener; principle of drawing slivers; purpose of drawing frame; comparing work of leather covered and metallic rolls; adjustment of rolls; distribution of draft between the rolls; speeds, stop motions; all calculations on above machines, drafts, production, etc.

405. Fly Frames

JUNIOR CLASS; COURSE VI.

Slubber, intermediate, fine roving and jack frames; construction, care and operation of the modern fly frame; bobbin and flyer lead machines; advantages of the bobbin lead; detailed explanation of working parts, differential motion, horse head, builder, full bobbin stop motion, etc.; adjustment of drawing rolls; calculations for draft, twist, lay, tension and other gears.

406. Yarn Manipulation

JUNIOR CLASS; COURSE VI.

In this branch of work is included twisting; reeling; bundling; spooling; beaming. The slasher, construction and use; necessity for sizing; creels, cylinders, size boxes, etc.; mixing of size; different sizing ingredients for special purposes; method of preparing warps for the slasher; various calculations regarding each of the above processes.

407. Combing

SENIOR CLASS; COURSE VI.

Sliver lap machine, its construction, use, etc.; care and operation; leather covered rolls, metallic rolls; ribbon lap machine, its construction, use, etc.; advantages of using same; care and operation; lap formation; combing machine, its use, care and operation; detailed explanation of working parts, cylinder, half laps, segments, detaching rolls, etc.; with rules for adjusting and timing same; regulation of waste made; necessity of the process; relation of the process to fine smooth yarns; practical experience in adjusting above machines; calculation for change gears, etc.

408. Spinning Frames

SENIOR CLASS ; COURSE VI.

Construction of the modern ring spinning frames ; purpose of ring spinning ; discussion of its principal parts ; rings and ring holders ; various types of spindles in use ; speed of spindles ; weights, sizes and speeds of travellers ; warp, filling and combination builder motions ; speeds and settings of rolls for different lengths of staple ; effects of twist on the strength, color and elasticity of yarns ; calculations for draft, twist, production and various constants.

409. Spinning Mules

SENIOR CLASS ; COURSE VI.

Construction and operation of the self-acting spinning mule ; special features ; description of the head stock, cam shaft, copping rail, nosing motion, easing motion, jacking motion, twisting at the head, etc. ; different movements in the mule and timing of the same ; formation of a cop ; characteristics and uses of mule spun yarn ; calculations for draft, twist, builder gear, etc.

Text and Reference Books: Nasmith's Student Cotton Spinner ; Tompkins' Cotton Mill Processes and Calculations ; Taggart's Cotton Spinning ; Monie's Sizing and Sizing Compounds.

For descriptions of equipment, see page 75.

Weaving and Designing

Associate Professor Frissell

410. Hand Loom Weaving

JUNIOR CLASS ; COURSE VI.

The first practical work in weaving is on the hand loom. These hand looms have 4x4 box motion and 30 harness dobbies. After the design and necessary calculations have been made the student proceeds with dressing, drawing-in, reeding, tying the warp in loom, building harness chain and starting up loom ; producing different weave effects from the same drawing-in draft by changing the harness chain ; using box motions for color effects ; combining two or more systems of filling with one system of warp, two or more systems of warp with one system of filling, two or more systems of warp

with two or more systems of filling to produce figured fabrics of a special character; explanation of the different methods used in raising and lowering the harness.

411. Power Loom Weaving

JUNIOR AND SENIOR CLASSES; COURSE VI.

Power loom weaving will be taken up after the student has finished the required amount of hand loom work and will include a study of the plain or cam loom; cam motions used for raising and lowering the harness, such as the under cam, side cam, etc.; setting cams; sketching cams to produce a given motion; arrangement of strapping for two, three, four and five harness; timing cams to suit the number of harness used; speed of different width looms on the same class of fabrics; selection of temples and measurements for same; Draper loom; warp stop motion, filling change mechanism, etc.; the dobby analysed and explained; methods of shedding; head motions; harness chains for single and double index dobbies; chains for head motions; explanation of box motions, four by one, four by four box, etc.; building box motion chains; explanation of multipliers used on box motions and harness motions; let-off motions, Morton, Bartlett, Shepard, and friction let-offs; open and closed shed machines explained; single and double index dobbies, etc.

412. Designing

JUNIOR AND SENIOR CLASSES; COURSE VI.

Purpose of designing; explanation of "warp" and "filling;" representing weaves on design paper; foundation weaves; plain or cotton weave; weaves derived from plain weaves, such as rib and basket weaves; twill weaves and methods of construction; derivative weave from twills, such as, broken, steep, skip, reclining and curved twills; corkscrew twills, entwining twills; satin weave and the purpose of same; weaves derived from satins; such as double satins and granites; shading of satins; figured effects produced by using warp and filling satins; color effects produced by using two or more colors in the above fabrics; methods of constructing granite weaves; points to be considered in combination weaves; special weaves; honey combs, gauze and imitation gauze, bedford cord, plain and fancy piques, matelasses, etc.; two systems of warp and one system of filling, or two systems of filling and one system of warp for the purpose of figuring; explanation of double cloth, purposes, and class of

fabrics in which generally used; representing double cloth weave on design paper; use of different proportions of "back" and "face" for special effects; methods of stitching double cloth so that the stitching will produce a figuring effect; stitching so that it will not show either on "face" or "back" of cloth; leno weaves and method of representing on design paper; methods of making drawing-in drafts, plain and fancy drafts, point, skip, mixed or cross draws; chain drafts; rules for finding the number of heddles required for each harness; methods used in reducing weaves to the lowest number of harness.

413. Jacquard Designing

SENIOR CLASS; COURSE VI.

Explanation of the various Jacquard machines; methods of shedding, such as, the rise and drop, single lift, double lift machine; single and double cylinder machine; open and closed shed machine; drawing of tie-ups, straight tie-up both in French and English system, point tie-up, combination tie-up for special goods as table damask, Marseilles quilts, etc.; practical operation of tying-up a Jacquard, cutting leashes, threading of comber board, tying on and leveling up mail eyes; figuring comber board for a given texture of goods; casting out hooks to reduce texture of goods without retying the harness, cutting and lacing cards for a given design; selection of design paper for different fabrics, with regard to picks and ends per inch used; methods used in laying out the figure for a Jacquard design; enlarging the sketch for design paper.

414. Cloth Analysis

SENIOR CLASS; COURSE VI.

Methods of arranging cloth sample for analysis; figuring the counts of cotton, woolen, worsted, and silk yarns; calculations for converting one system of yarn into that of another; finding the weight of cloth per yard and the counts of yarn used in its construction from the analysis; figuring width of warp in reed and number of reed to use to produce a given width and texture when woven; calculations to determine the cost of producing a fabric having given values of material, labor, counts, picks and ends per inch, weight per yard, etc.

This work takes up all representative classes of weaves that can be woven on harness, and gives the student a thorough knowledge of figuring yarns, weight of cloth, ends and picks per inch, etc.

Reference Books: Ivey's Loom Fixing; Fox's Mechanism of Weav-

ing; Posselt's Technology of Textile Designs; Holmes' Cotton Cloth Designing.

For description of equipment, see page 76.

Textile Chemistry and Dyeing

Assistant Professor James

420. Textile Chemistry

JUNIOR CLASS; COURSE VI.

To the qualitative and quantitative analysis of the general course is added a course of lectures in inorganic chemistry especially relating to the materials used in the various textile processes of mordanting, fixing, scouring, bleaching, etc. Also lectures on organic chemistry, taking up as much of the aliphatic series as is necessary for an understanding of the chemical reactions involved in the application of these compounds to textile operations, and to prepare the student for the study of the aromatic compounds. Toward the end of the year the discussion of the simpler aromatic compounds is begun as an introduction to the special work on synthetic dyestuffs in the senior year.

The laboratory work will include the preparation of typical compounds of each class of derivatives taken up in the lectures.

421. Dyeing

SENIOR CLASS; COURSE VI.

A course of lectures is given which covers that portion of the aromatic series which has reference to the study of the principal synthetic dyestuffs. The laboratory work consists of the preparation of certain typical dyestuffs and the study of their reactions. A complete written report of each experiment is required of the student, and written reviews are given each month on the subjects covered in the lectures and laboratory work. The purpose of the course is to give the student an understanding of the chemistry of the operations by which coal tar products are separated, purified and converted into dyestuffs.

A course of lectures is also given on the application of the different classes of dyestuffs to the various fibres, together with the chemical and physical properties of the latter; bleaching and mercerizing of cotton yarns and cloth; scouring and bleaching of wool; the man-

ufacture of artificial silk; calico printing, etc. In the laboratory the dyeing of cotton and wool is carried on in an experimental way, a study being made of typical dyestuffs of each of the principal classes. In the dye-house the dyeing of larger quantities of cotton and wool is carried on, as well as the bleaching and mercerizing of cotton, scouring and bleaching of wool, and the printing of calico.

The student is required to make a written report of each experiment performed, accompanied by samples of the dyed material, which have been subjected to the action of various agencies, such as light, acids, alkalies, etc.

The purpose of this training, taken in connection with the work preceding it, is to serve as an introduction to the work of the practical dyer, and to prepare the student for the position of chemist in textile establishments. The constant aim of the instruction is to point out the chemical reactions at the foundation of the above textile operations, so that the student going into practical work in the mills, will have at his command scientific knowledge sufficient to enable him to study intelligently such problems as may come before him in his line of work.

Reference Books: Richter's Organic Chemistry; Bernthsen's Organic Chemistry; Holleman's Organic Chemistry; Allen's Commercial Organic Analysis; Heermann's Dyer's Materials; Schultz & Julius' Organic Coloring Matters; Georgievics' Chemical Technology of Textile Fibres; Georgievics' Chemistry of Dyestuffs; Ken-echt, Rawson & Lowenthal's Manual of Dyeing; Beech's Dyeing of Cotton Fabrics; Hummel's Dyeing of Textile Fabrics; Frap's Principles of Dyeing.

For description of equipment, see page 77.

Academic Department

English

Professor Furman

Assistant Professors McLucas, Daniel, Keitt, Bryan

The purpose of the course in English is to enable the student to acquire the power to express his thoughts with clearness, precision and force; and to cultivate in him a taste for good literature. Elementary English grammar and the rudiments of composition are taught in the preparatory class.

500. English Grammar and Word Studies

PREPARATORY CLASS

This class is carefully prepared for entry upon the work of this College, several of the professors in English having charge of its sections. The intention is to make the English course continuous, so that there may be no break between the preparatory and freshman work, either in teachers or text-books. The books used in the Preparatory class are: Buehler's Grammar, Gilbert's Studies in Words, and such reading texts as may from time to time be selected by the instructors. Special attention is paid to spelling, definition of words, oral reading, and written exercises.

501. English Grammar, Reading and Composition

FRESHMAN CLASS; ALL COURSES

A review of the subject of grammar introduces the work of this class. Constant drill is given in theme writing; pupils being expected to make use of the College library under direction of instructors. Methods of using dictionaries, encyclopedias, and other reference books, are explained practically to the students. Full supplementary readings are required and practice is given in the writing of abstracts of books so read.

Text-books: Emerson-Lockwood's Lessons in English; Buehler's Practical Exercises in English; Webster's School Dictionary; and such English classics as may be assigned.

502. Rhetoric, Composition, American Literature

SOPHOMORE CLASS; ALL COURSES

The study of rhetoric is pursued throughout the year. Constant theme writing is required. To supplement the work in composition, a brief course in American Literature is given, and parallel readings from American authors are assigned.

The text-books are Lewis's Second Manual of Composition, and Noble's Studies in American Literature. The parallel reading for 1903-4 consisted of Franklin's Autobiography, Irving's Alhambra, Cooper's Spy, Emerson's Essays (selected), Holmes's Autocrat of the Breakfast Table, Hawthorne's Scarlet Letter, Selections from the poems of Bryant, Poe, Longfellow, Holmes, Whittier, Lowell, Lanier, and minor Southern poets.

503. English Literature

JUNIOR CLASS; ALL COURSES

The work in the Junior class begins with the critical study of Macaulay as an essayist. This is followed by a general course in English literature. Pancost's English Literature is the text-book—this work being supplemented by lectures. Monthly essays are required, and frequent oral readings, embracing selections from the principal English authors from Chaucer to the present time.

504. Studies in Shakespeare

SENIOR CLASS; ALL COURSES

This class is given instruction in the principles of literary criticism. A somewhat full course in Shakespeare study is furnished. Several plays are read in class—the students being orally examined on all questions, grammatical, historical, and ethical, which arise in the study of this author. Monthly essays are required.

History and Political Economy

Professor Morrison

The course includes history of the United States, South Carolina history, general history, commercial geography, and political economy.

The method of instruction is a combination of the text-book and lecture methods, with parallel readings as far as practicable under the instructor's direction. The class-room is supplied with globes, charts, maps and works of reference, in the use of which the young men are carefully trained. The students make liberal use of the many volumes of poetry, historical romance, biography and history found in the College library.

The history of South Carolina and the history of the South receive special attention. "A people which takes no pride in the noble achievements of a remote ancestry will never achieve anything worthy to be remembered by remote descendants." Every effort is made to enable the young men to see and feel as their fathers and forefathers saw and felt.

510. United States History

PREPARATORY CLASS

Text-book: Eggleston's History of the United States and its People.

511. South Carolina History

FRESHMAN CLASS; ALL COURSES

Text-book: Weber's History of South Carolina.

512. Commercial Geography

FRESHMAN CLASS; ALL COURSES

Text-book: Olin's Commercial Geography.

513. General History

SOPHOMORE CLASS; COURSES III., IV., V., VI.

JUNIOR CLASS; COURSES I. AND II.

Text-book: Anderson's New General History.

514. Civics

SOPHOMORE CLASS; COURSES III., IV., V., VI.

JUNIOR CLASS; COURSES I., II.

Text-book: Clark's Government.

515. Political Economy

SENIOR CLASS; ALL COURSES

Text-book: Gide's Principles of Political Economy, second American edition (1904).

Mathematics

Professor Brodie

Assistant Professors Martin, Reaves, Houston, Shanklin

This course presupposes a thorough knowledge of arithmetic and algebra through elementary quadratics. (See requirements for admission, page 26.)

520. Algebra

FRESHMAN CLASS; ALL COURSES

Review of involution, evolution, theory of indices and quadratics; simple indeterminate equations; inequalities; proportion and variation, logarithms.

Text-book: Hall and Knight's Algebra for Colleges and Schools.

521. Geometry

FRESHMAN CLASS; ALL COURSES

Rectilinear figures; circles; similar figures; comparison and measurement of surfaces of polygons; regular polygons and circles. Plane and solid angles; polyhedrons; cylinders and cones; spheres, spherical polygons and pyramids; volume. Special attention is given to the formation, on the part of students, of the habit of clear and accurate reasoning and concise expression.

Text-book: Wentworth's Geometry.

522. Trigonometry

SOPHOMORE CLASS; ALL COURSES

Measurements of angles; trigonometric functions; right triangle; goniometry; relations between functions of one angle; functions of multiple angles; inverse functions; trigonometric equations; oblique triangles; De Moivre's theorem; spherical trigonometry; general formulas; right spherical triangle; oblique spherical triangle; applications.

Text-book: Phillips and Strong's Trigonometry.

523. Descriptive Geometry

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Study of the representation of points, lines, planes, surfaces and solids, and of their relations; tangencies, intersections and developments; shades, shadows and perspective; numerous original exercises.

Text-book: Low's Practical Solid or Descriptive Geometry.

524. Higher Algebra

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Progressions; binomial theorem; theory of limits; convergency; divergency; and summation of series; undetermined coefficients; continued fractions; determinants; theory of equations.

Text-book: Hall and Knight's Algebra for Colleges and Schools.

525. Analytic Geometry

SOPHOMORE CLASS; COURSES III., IV., V., VI.

JUNIOR CLASS; COURSES IV., V., VI.

Cartesian and polar systems of co-ordinates; discussion and construction of loci; the straight line; transformation of co-ordinates; circle; parabola; ellipse; hyperbola; general equation of second degree involving two variables; higher plane curves; solid analytic geometry; systems of co-ordinates; equation of the plane; the straight line in space; surfaces of the second order.

Text-book: Tanner and Allen's Analytic Geometry.

526. Differential Calculus

JUNIOR CLASS; COURSES IV., V.

Differentiation of algebraic functions; transcendental functions; successive differentiation and development of functions; functions of

two variables; tangents and asymptotes; maxima and minima; radius of curvature; evolutes and involutes; envelopes.

Text-book: Snyder and Hutchison's Differential and Integral Calculus.

527. Integral Calculus

JUNIOR CLASS; COURSES IV., V.

Elementary forms of integration; rational fractions; integration of irrational fractions; successive reduction; integration of functions of two variables; lengths of curves; areas of plane curves; rectification of curves; cubature of volumes.

Text-book: Snyder and Hutchison's Differential and Integral Calculus.

Civil Engineering

(Included in the Department of Mathematics.)

530. Plane Surveying

SOPHOMORE CLASS; ALL COURSES

This course includes the general principles and fundamental operations of surveying with compass, level, and transit. The field work includes actual surveys of tracts of land, of which the areas are computed and plats are drawn. Experience is given in problems of laying out and dividing up land, and in locating irregular boundaries. Practice is also had in section and differential leveling.

Text-book: Davies-Van Amringe's Surveying.

531. Higher Surveying

JUNIOR CLASS; COURSE V.

Use and adjustment of transit, stadia, solar compass, and plane-table; topographic surveying with transit and stadia; railroad topography; triangulation; city and hydraulic surveying; mine surveying; geodetic surveying; map and plan drawing; topographical symbols, etc.

Text-book: Johnson's Surveying.

532. Highway Engineering

JUNIOR CLASS; COURSE V.

Location, construction and maintenance of country roads and city streets; advantages of various materials for road covering; effects of grades and surface upon the cost of transportation; plans and specifications; practical problems in change of grade and relocation from surveys of existing roads.

Text-book: Spalding's Roads, Streets and Pavements.

533. Railway Engineering

JUNIOR CLASS; COURSE V.

Preliminary and location surveys; location from contour map; laying out of simple and compound curves; setting of slope stakes; computation of earthwork; switches; turnouts; theory of economic location; effects of grades, curves and length upon the cost of operation.

Text-book: Webb's Railway Construction.

534. Rural Engineering

JUNIOR CLASS; COURSES I., II.

This course is arranged with special view to the needs of the agricultural students. Among the subjects taught are: Farm surveying; laying out and dividing up land; land drainage, including surface-drainage, under-drainage, and hill-side ditching and terracing. Road engineering, a practical course in road making and maintenance, with special reference to conditions in South Carolina. The principles underlying grade and surface resistance, drainage, surfacing, and the best methods of construction are carefully studied. The instruction in the class-room is supplemented by a liberal amount of field practice.

Text-books: Gillespie's Manual of Road-Making; Elliott's Farm Drainage.

535. Railway Engineering

SENIOR CLASS; COURSE V.

Surveys are made for a line of railway a mile or more in length; the necessary plans, profiles and cross-sections are prepared; grades are determined, curves laid out, slope stakes set, and all the needed

measurements made to enable the student to compute the excavations and embankments, and to estimate the cost of construction.

Text-book: Webb's Railway Construction.

536. Structural Engineering

SENIOR CLASS ; COURSE V.

Building materials ; mechanics of construction ; derivation of practical formulas ; masonry ; foundations on land and in water ; stability of walls and arches ; analytical and graphical investigation of stresses in plate girders, Howe, Pratt, Warren and other types of highway and railroad bridges, and various forms of roof trusses ; bridge design.

Text-books: Wheeler's Civil Engineering ; Merriman and Jacoby's Roofs and Bridges, Parts I. and III.

537. Hydraulic Engineering

SENIOR CLASS ; COURSE V.

Hydrostatics ; efflux ; resistance and work of liquids ; motion of water in pipes and open channels ; derivation of practical formulas ; hydrostatic and hydraulic machinery ; determination of discharge of stream ; head and available power ; form and dimensions of pond or reservoir ; detailed topography of dam site ; determination of form and dimensions for stability of dams ; preparation of plans and specifications ; lectures on water-supply engineering.

Text-book: Merriman's Hydraulic Engineering.

For description of equipment, see page 79.

Military Department

Captain Sirmyer, 8th U. S. Cavalry, Director
Commandant of Cadets

Military Science and Tactics

Captain Sirmyer

The course in military instruction, as prescribed and followed, is both theoretical and practical.

600. Tactics and Elements of Military Science

JUNIOR CLASS; ALL COURSES

The theoretical instruction, given by recitations and lectures, includes the following, as prescribed by the War Department: The Infantry Drill Regulations, including the School of the Battalion in both close and extended order; the Manual of Guard Duty.

601. Military Science

SENIOR CLASS; ALL COURSES

Small-arms Firing Regulations; the Articles of War, with special reference to articles 4, 8, 15, 20, 21, 22, 23, 24, 32, 38, 39, 40, 42, 44, 46, 47, 50, 55, 57, 61, and 65. Also the following records: Enlistment and discharge papers, including descriptive lists; morning reports; field and monthly returns; muster rolls; rosters; ration returns; requisitions; property returns.

In addition, ten lectures are given each year upon the following subjects: Two lectures on the organization of the United States Army; one lecture on patrols and outposts; one lecture on marches; one lecture on camps and camp hygiene; three lectures on lines and bases of operations; two lectures on the attack and defence of advance and rear guards, and outposts and convoys.

The articles of war specifically mentioned are among the most important for the young officer to know on first entering the service. The records for study should be thoroughly understood by all graduating cadets, because they show how the soldier enters and leaves the

service; how he is accounted for, paid, fed, clothed, armed; and how his military duties are regulated.

602. Military Drill

REQUIRED OF ALL CADETS

Drill regulations, including the school of the battalion through close and extended order; advance and rear guards and outposts; marches; the ceremonies of battalion review, inspection, parades, guard mounting, and escort of the colors; infantry target practice; instruction in first aid to the injured; guard duty.

In addition to the benefit which the general government derives from the military instruction given at this and other colleges, it is believed that the discipline enforced, the habits of obedience and punctuality inculcated, the improvement in bearing and appearance of those instructed, and also the practice in directing and commanding others, which nearly all in the course of time get, is of immense benefit to the students individually.

ORGANIZATION AND MODE OF
GOVERNMENT

GENERAL INFORMATION

Organization and Mode of Government

The following extracts from the book of "Regulations" explain the organization and mode of government of the corps:

Organization

"1. The President of the College shall have the general command and government of the institution, watching over its administration, discipline and instruction."

"2. The Commandant of Cadets, under the President of the College, has immediate command and control of the corps of cadets in all that pertains to its organization, drill, military police, discipline and administration. He is charged with the instruction of the cadets in the theoretical military course and in all practical military exercises. He will prescribe the order in which the furniture, bedding, books, clothing, equipments, etc., shall be arranged throughout the barracks, and shall, in person, make a minute and thorough inspection of the rooms, furniture, arms and accoutrements, etc., of the cadets at least once each week, and make a report thereon to the President."

"3. For instruction in tactics and for military police and discipline the corps of cadets will be organized into one or more battalions of two or more companies each, and a band when practicable. In case the number of the cadets will permit of the formation of two or more battalions, the organization will be regimental."

"4. The cadet officers and non-commissioned officers will be appointed by the Commandant of Cadets, subject to the approval of the President of the College. The selection for these positions will be made from those cadets who have been most studious and soldier-like in the performance of

their duties and most exemplary in their general deportment. As a rule the cadet captains and lieutenants will be selected from the senior class; the non-commissioned staff and the sergeants from the junior class; and the corporals from the sophomore class.

"5. The field and staff shall consist of two cadet majors, two cadet lieutenants and adjutants, one cadet captain and adjutant, one cadet captain and quartermaster. The non-commissioned staff shall consist of one regimental sergeant-major, one regimental quartermaster-sergeant, two battalion sergeant-majors and one regimental color sergeant."

"6. In each company there shall be one captain, two lieutenants, one first sergeant, one company quartermaster-sergeant, and as many sergeants and corporals as may be required."

"7. Each of the battalions will be commanded, when on drill, and at such other times as the Commandant of Cadets shall direct, by its Cadet Major."

"8. On the graduation of every class the Commandant of Cadets shall obtain the names of such cadets as shall have shown special aptitude for military service, and furnish a list thereof to the Adjutant General of the State for his information. A copy of this list will also be sent to the Adjutant General of the United States Army, and the names of the three most distinguished students in military science and tactics, will, when graduated, be inserted in the United States Army Register."

Leaves of Absence

Communications from parents, requesting leave of absence from the College for their sons, must be addressed directly to the President and not through the cadets.

The rules governing in cases of permits to visit home dur-

ing the session of the College require that cadets who have accumulated more than five demerits in any one term, and who have fallen below grade two in their studies on any report, will not be allowed to leave College during the term except in cases of extreme sickness or death in the family.

No leave of absence or honorary discharge will be granted after May 1st, except for serious causes.

Students who have been granted leaves of absence and who stay over the date allowed, unless for sickness or other good and valid reasons, will be required to pay again the incidental fee of \$5.00 before they will be permitted to continue their studies. In case of sickness, a certificate from the attending physician must be submitted to the President.

General Regulations

In addition to the special regulations of the military department, a copy of which is given each cadet, the following general regulations are enforced:

Cadets are subject to military discipline at all times, and are required to take part in drill, guard duty and other military exercises.

All undergraduate students are required to board in the barracks, except those who live with their parents or relatives near enough to attend from their homes.

Each student is required to purchase the prescribed uniform; also a pair of over-shoes and a water-proof coat. Students may provide themselves with such work-clothes as they desire.

Those occupying a room are consulted before another student is assigned to that room. A student not satisfied with his room-mate has the privilege of applying for permission to move to another room, and such applications are granted when practicable.

Cadets must at all times be respectful in their bearing to professors and other officers of the College.

The practice known as hazing is positively forbidden. All cadets, upon matriculation, shall be required to sign a pledge not to indulge in hazing or injuring in any form the person of any cadet or give countenance or encouragement thereto while a member of the corps of cadets. Any cadet indulging in this practice will be dismissed from the College.

Cadets are positively forbidden to use, or have in their possession, intoxicating liquors of any description.

Profanity and gambling are positively forbidden.

All combinations of cadets for the purpose of censuring one of their number are prohibited; also all combinations to defeat the purpose of any regulation of the College.

If any cadet shall consider himself wronged by another, or by an officer of the College, he has the right to complain thereof in writing to the President, who will examine into the complaint and take such measures for redressing the wrong as he may deem proper.

Cadets are forbidden to keep any fire-arms or other weapons in their possession not issued by the proper authority.

Any cadet receiving 100 demerits during a term of five months shall be brought before the Discipline Committee and shall be dismissed or less severely punished.

Any cadet who leaves barracks without authority between retreat and reveille shall be dismissed.

The College rules require that all students be vaccinated, and parents are advised to have this done before sending their sons away from home.

Cadets who receive no demerits during any calendar month will be given a credit of eight to be applied in removing any demerits they may have had charged against them during any preceding months of that term.

Religious Exercises

Chapel Services.—There is preaching in Memorial Hall every Sunday morning by ministers of the different denominations, and chapel services are conducted every morning by the President and members of the Faculty. All students are required to attend these exercises unless specially excused.

Sunday School.—A Sunday School, at which attendance is voluntary, also meets every Sunday morning, and students are encouraged and urged to attend.

Young Men's Christian Association.—This is a voluntary organization of the students, and is entirely under their management. The objects of the Association are to promote Christian fellowship among its members and aggressive Christian work among the students. The meetings are held in Memorial Hall every Sunday evening. The membership is of two classes—active and associate. A member in good standing of any evangelical church may become an active member of the Association, and any young man of good moral character may become an associate member. The Faculty are in hearty sympathy with the work of the Association, and render cheerful service when requested to do so. Parents and guardians are advised to encourage the students to join the Association as soon as they reach the College.

Churches.—Episcopalian and Presbyterian churches are located near the College, and a number of students attend their Sunday Schools and preaching services.

Care of the Sick

The Surgeon is one of the regular officers of the College, and his special duty is to look after the health of the students. He also has charge of the hospital and supervises all matters pertaining to the sanitation of barracks.

At a regular appointed time every day, students who so desire may consult the Surgeon; and those who are sick are

cared for by experienced nurses in the College hospital. In case of necessity, students are allowed to consult the Surgeon at any time, or send for him, as may be required.

Parents will be kept fully informed of the condition of sick students. The Surgeon, however, cannot undertake to notify parents every time a student reports to the hospital for medicine, or for rest on account of some slight complaint. Parents may always rest assured that they will be promptly notified of sickness of any consequence; and in case of serious illness the Surgeon will telegraph them.

Student Labor

The College assumes no obligation to furnish employment to students for wages. Considerable manual labor, however, is necessary to carry on the various departments of the College; and, when practicable, students are employed in this work, and are paid at the rate of eight cents an hour. The number applying for work always exceeds the number that can be employed, and those who enter College late in the session are at a special disadvantage in securing work.

No student is allowed to undertake work that interferes with his College course.

Literary Societies

Three literary societies, the Calhoun, the Columbian and the Palmetto, furnish a valuable supplement to the work of the College. These societies afford facilities for practice in debate, oratory, declamation and essay-writing, and their members acquire valuable knowledge of parliamentary law and usage. The meetings are held weekly on Saturday evenings. An annual contest is also held by each society, at which there are debates, orations and declamations by the students.

On these occasions a representative is chosen from each

society to enter the contest for the Trustees Medal at commencement. The societies themselves also award medals annually to the best debater, orator, and declaimer.

The societies occupy halls in the main College building, which are furnished with carpets and opera-chairs, and are maintained entirely by the students. A small fee is charged for initiation, and there are also monthly dues of a few cents to meet running expenses. All students are advised to join one of these societies.

State Oratorical Association

The literary societies also send a representative to the annual contests of the South Carolina Intercollegiate Oratorical Association, which includes the following institutions: Furman University, Wofford College, Clemson Agricultural College, Presbyterian College of South Carolina, Erskine College, Newberry College, South Carolina College, and South Carolina Military Academy.

Publications by the Students

The Clemson College Chronicle, a monthly magazine designed to encourage literary work among the students, is published jointly by the literary societies during the College session.

The Oconeean is the name adopted for the annual, an illustrated volume published under the auspices of the senior class.

Science Club

The Clemson College Science Club was organized for the purpose of promoting knowledge of the progress of the natural sciences, theoretical and applied. Public meetings are held every month, at which subjects of general scientific interest are discussed by members of the Faculty and advanced students of the College.

Lecture Course

A lecture course, employing some of the best talent on the American platform, is provided every session. These lectures are delivered in Memorial Hall, at a cost to students of \$1.00 for the course. During the session of 1903-1904, the following lectures and concerts were given:

"Lee, the Model Man," by Dr. J. William Jones.

Concert, by Mozart Symphony Club.

"Python Eggs and the American Boy," by Dr. John B. DeMotte.

"Magic and Music," by E. Maro.

Author's Reading, by Dr. Henry Van Dyke.

"The Three Reverences," by Dr. Jenkin Lloyd Jones.

Concert, by Dunbar Hand Bell Ringers.

Concert, by Chicago Glee Club.

Cadet Exchange

A Cadet Exchange is maintained, where students may purchase at wholesale prices necessary articles, such as books, stationery, collars, cuffs, underwear, etc.

College Athletics

It is the policy of the College to sanction and encourage athletics so long as they do not interfere with studies and other duties. Football and baseball are the most popular games, and it is assumed that parents are willing for their sons to participate in these games unless the President is definitely notified to the contrary. The athletic teams are permitted to take a few trips each season, usually on Saturdays, to play intercollegiate games. Students must file written permission from parents for these trips.

Athletic Council.—The Southern Intercollegiate Athletic Association, of which the College is a member, has placed

the athletic interests of each college under the supervision of an Athletic Council, consisting of members of the Faculty and of the student body. This council consists of nine members—two members of the Faculty selected by the students for president and secretary-treasurer, respectively, three members of the Faculty chosen by the Faculty, and four students.

Intercollegiate Athletics.—For the regulation of intercollegiate athletics, the Faculty has adopted the following rules:

1. Any student who fails on more than two subjects during a collegiate month shall not be allowed to participate in match games during the ensuing month. If, by reason of absence or other cause, a grade on the month's work is lacking, the instructor shall give a temporary grade based upon the work done, and this temporary grade shall be used in determining the student's athletic standing until the regular grade is available.

2. No student who is found to be deficient in any subject for a term shall be allowed to play in any match game during the next college year. Change from one course to another or from a regular to an irregular or special course shall not interfere with the operation of this rule.

3. No graduate student shall participate in any match game unless he is taking at least twenty hours per week of graduate work; that is, work of a higher grade than is given in the regular college courses. Such student shall also conform to the rules of class standing as set forth in sections 1 and 2. Further, no graduate student of more than one year's standing shall participate in any match game.

4. No irregular or special student shall be allowed to represent the College in any match game unless taking at least 24 hours work per week, of which not less than 12 hours shall be "theoretical" work.

5. No football player who leaves College before the end of the first term, except for reasons satisfactory to the Faculty Athletic Committee, shall be allowed to participate in match games during the next two college terms.

6. It shall be the duty of the Faculty Athletic Committee to see that the foregoing rules and regulations are strictly enforced.

7. No team shall be allowed to leave the college grounds to participate in match games unless accompanied by a member of the Faculty, who shall be responsible to the Faculty for the conduct of players

and coaches while away from the College. Such representative shall be appointed by the Chairman of the Faculty Athletic Committee, and his expenses shall be included in the expenses of the trip.

Field Day.—May 1st is observed as a holiday for contests in track and field athletics, such as running, hurdling, high and broad jumping, pole-vaulting, hammer-throwing, putting the shot, etc., and is known as "Field Day."

Donations

Textile Department.

The A. T. Atherton Machine Co., Pawtucket, R. I.—One automatic feeder; one combination breaker and finisher lapper; one lot of lap rods.

Saco & Pettee Machine Co., Newton Upper Falls, Mass.—One 40-in. revolving top flat card; one Entwistle traverse grinder; one Entwistle drum grinder; one burnisher; one set carder's tools; one improved railway head, with back, front and full cam stop motion; one 4 delivery draw frame, with back, front and full cam stop motion, fitted with single preventer rolls; one 40 spindle slubber; one 60 spindle intermediate roving frame; one 80 spindle fine roving frame; one 128 spindle combination warp and filling ring spinning frame; one 72 spindle improved spooler. A sufficient number of gears were sent with these machines to make various changes that may be necessary.

Mason Machine Works, Taunton, Mass.—One 40-in. revolving top flat card; one Entwistle drum grinder; one stripper brush; one set carders' tools; one railway head, with back, front and full cam stop motion; one 4 delivery draw frame, with back, front and full cam stop motion, fitted with single preventer roll; one 112 spindle combination warp and filling ring spinning frame; one 40-in. plain loom; one 36-in. fancy cotton loom; one 36-in. 24 harness dobby loom; half

value on combing machinery. All necessary gears with these machines to make the required changes.

The D. A. Tompkins Co., Charlotte, N. C.—One adjustable reel; one draw-in frame; one loom box; one doffer box; two section beams; one switch board, complete; one emery wheel and stand.

Draper Co., Hopedale, Mass.—One 40-in. Northrop loom; one 28-in. Northrop loom; one 48 spindle combination wet and dry twister; one 40 spindle spooler; one warper, with creel; four section beams; temples as required; loom findings.

Crompton & Knowles Loom Works, Providence, R. I.—Half value on following: One 32-in. loom, with 416 hook Jacquard; one 32-in. loom, with leno attachment; one 65-in. 4x1 box loom, with 624 hook Jacquard; one 36-in. Knowles "Gem" loom; one 36-in. fancy cotton towel loom; two 16 harness dobbies.

Universal Winding Co., Boston, Mass.—One 6 spindle cone and tube winder.

Woonsocket Machine and Press Co., Woonsocket, R. I.—Half value on one 96 spindle jack roving frame.

Whitin Machine Works, Whitinsville, Mass.—Half value on following: One 40-in. cam loom; one 40-in. loom, with 20 harness dobby.

T. C. Entwistle, Lowell, Mass.—Half value on one beaming frame.

Fales & Jenks Machine Co., Pawtucket, R. I.—Two combination warp and filling spinning frames, 80 spindles each; one wet twister, combined filling and taper top wind, 70 spindles.

T. B. Wood's Sons, Chambersburg, Pa.—One-fourth value on equipment of shafting, hangers and pulleys used in new extension of building.

Jones & Laughlin Co., Limited, Pittsburg, Pa.—The entire original equipment of shafting, hangers and pulleys.

Schaum & Uhlinger, Philadelphia, Pa.—One top engine drive, self-balancing, hydro-extractor.

The Metallic Drawing Roll Co., Indian Orchard, Mass.—Metallic drawing rolls for railway heads and draw frames as required.

Westinghouse Electric Co., East Pittsburg, Pa.—One 22 K. W., 220 volt direct current motor.

The American Moistening Co., Boston, Mass.—Complete system of "Vortex" humidifiers, including pump, tank and connections.

Beattie Machine Works, Cohoes, N. Y.—One single elastic stitch looper.

E. Jenckes Manufacturing Co., Pawtucket, R. I.—One "Invincible" seamless hosiery knitting machine.

W. W. Altemus & Son, Philadelphia, Pa.—One bobbin winder.

New Bedford Paper Co., New Bedford, Mass.—Cops, cones, tubes, etc., as required.

Charlotte Supply Co., Charlotte, N. C.—All belting as required.

American Supply Co., Providence, R. I.—Heddles, heddle frames, reeds and loom supplies as required.

Loom Picker Co., Biddeford, Me.—Loom supplies.

The Emmons Loom Harness Co.—Cotton harness, reeds and loom supplies.

Roney & Rae Co., Woonsocket, R. I.—Twelve bobbin holders.

Steel Heddle Manufacturing Co., Philadelphia, Pa.—2,500 patented flat steel heddles.

R. A. Blythe, Philadelphia, Pa.—One lot mercerized yarns.

Barber & Coleman, Boston, Mass.—One Barber knotter.

National Ring Traveller Co., Providence, R. I.—One lot of spinning and twister travellers.

DeHaven Manufacturing Co., Brooklyn, N. Y.—One lot of spinning and twister travellers.

Victor Shaw Ring Traveller Co., Providence, R. I.—One lot spinning travellers.

Morley Button Manufacturing Co., Boston, Mass.—One lot spinning travellers.

Sykes & Street, New York, N. Y.—Collection of dye stuffs.

New York and Boston Dyewood Co., New York, N. Y.—Collection of dye stuffs.

Victor G. Bloede & Co., Baltimore, Md.—Collection of dye stuffs and mordants.

Cassella Color Co., New York, N. Y.—Large collection of dye stuffs.

Kuttroff, Pickhardt & Co., New York, N. Y.—Collection of dye stuffs.

Farbenfabriken, of Elberfeld Co., New York, N. Y.—Large collection of dye stuffs, over 300 samples.

H. A. Metz & Co., New York, N. Y.—Large collection of dye stuffs.

Grasselli Chemical Co., New York, N. Y.—Chemicals used in dyeing.

Schoellkopf, Hartford & Hanna & Co., Buffalo, N. Y.—Large collection of dye stuffs.

Roessler & Hasslacher Chemical Co., New York, N. Y.—Sodium peroxide for bleaching demonstrations.

Berlin Aniline Works, New York, N. Y.—Collection of dye stuffs.

Chas. J. Fox, Philadelphia, Pa.—50 lbs. textile soaps.

Kalle & Co., New York, N. Y.—Collection of dye stuffs.

A. Klipstein & Co., New York, N. Y.—Collection of dye stuffs.

Southern Railway Co.—Half freight rates, over their lines, on entire original equipment of machinery.

Donations to the Library

Since the publication of the last catalogue, the library has received gifts from the following:

Dr. R. N. Brackett ("The Nation" and "Scribner's Magazine" for the year); Dr. P. H. Mell (many valuable pamphlets); Dr. P. H. E. Sloan (2 vols.); John B. Little (1 vol.); Class of 1903 (1 vol.); Chronicle Staff of 1902-3 (1 vol.); Harper & Bro. (1 vol.); State Library of North Carolina (8 vols.); Col. R. W. Simpson (1 vol.); J. S. Goodman (1 vol.); Bishop Ellison Capers (3 vols.); Brown Alumni Monthly (subscription); Thornwell Orphanage (subscription to "Our Monthly"); J. C. Stribling (14 vols.)

NOTE.—A special book is kept in which the record of every donation is preserved, and a special label is placed in each volume presented, stating the name of the donor.

Donations to the Museum

A silver sewing bird formerly owned by Mrs. John C. Calhoun, and afterwards by her daughter, Mrs. Clemson, has been contributed by Mr. J. C. Stribling, of Pendleton, S. C.

The pen used by the original seven Life Trustees in accepting the Clemson bequest has also been presented by Mr. J. C. Stribling.

Experiment Station and Inspection Work

Clemson College is not only engaged in providing courses of instruction for the youths of the State, but under the laws of South Carolina it is conducting work of great importance to the farmers, fruit growers, and people engaged in animal industry. There are four departments of experimentation and inspection inaugurated by the Board of Trustees:

1. Experiments in Agriculture (State Experiment Station).
2. Inspection of Fertilizers.
3. Veterinary Inspection.
4. Entomological Inspection.

The Experiment Station is devoted to experiments in subjects relating to the chemical composition of plants and soils; rotation experiments; plant breeding; study of forage plants for hay and pasturage; plant diseases; diseases of animals, such as tuberculosis, Texas fever, glanders; feeding of pigs; general dairy experiments; insects injurious and beneficial to plants; studies of varieties of fruits; methods of pruning grape vines, etc.

Bulletins giving the results of these experiments are published at intervals during the year, and are mailed free to every one who applies for them.

Although the Station was established for the benefit of the farmers, students of the College profit by the experiments, in connection with the regular courses of study.

The second division, viz: the inspection of fertilizers, is conducted by the Board of Trustees for the protection of the farmers in the State against the introduction of fraudulent brands of fertilizers. The inspectors are appointed by the Board of Trustees and the entire work of issuing tags, the analysis of samples and the enforcement of the law, is in the hands of the Board of Trustees of Clemson College. After paying the expenses required for conducting this inspection, all the surplus money is turned over to the College for running expenses and equipment.

On the 19th of February, 1901, the General Assembly passed an Act empowering the Board of Trustees of Clemson College to promulgate and enforce rules and regulations for the guidance of the Veterinarian of the College in the treatment or destruction of animals affected with contagious diseases, and to prescribe the powers of the Veterinarian whenever such diseases appear in any part of the State. In view of the frequent appearance of glanders and other contagious diseases in the State, this law will prove of great benefit to the stock-raising industry.

The Entomologist is required by the State law to inspect all nursery stock coming into the State and to prevent the ravages of insects as far as possible.

On the 19th of February, 1901, the General Assembly passed an Act requiring the Board of Trustees of Clemson College to designate three of their number, to be known as the State Board of Entomology. To the said Board was given full power to adopt rules and regulations governing the inspections relative to the sale and transportation of trees, plants, shrubs, cuttings, buds, vines, bulbs, or roots that they may deem advisable in order to prevent or remove or destroy any insect pests or plant diseases in the State. The Board was also

given power to appoint an Entomologist, who should be a skilled Horticulturist, and Assistant Entomologist, if, in their judgment, it would be impossible for the Entomologist to discharge the duties hereby devolved upon him. Such an Entomologist was also given the powers of an inspector, with authority to visit in sections of the State where insects injurious to plants are believed to exist, and to determine whether such plants should or should not be destroyed.

Popular Science Bulletins

In addition to the Experiment Station bulletins setting forth the results of experiments and other investigations in the interest of agricultural industries, the College will soon inaugurate a series of bulletins on a variety of scientific subjects of interest to the people at large, and written, as far as practicable, in non-technical language. A number of these are now in preparation, including the subjects of road construction and maintenance, protection against lightning, etc. They will be mailed, like the Experiment Station bulletins, free of charge to those who apply for them.

Analyses, Information, Etc.

The various departments of the College and Experiment Station will furnish, free of charge, advice and information on any topic pertaining to general agriculture, horticulture, botany, entomology, veterinary science, dairying, stock breeding, etc.; also, analyses of fertilizers, marls, waters and other substances, assays of ores, determination of rocks and minerals, tests of bricks, cements, building stones, illuminating oils, calibration of electrical instruments, etc.

The departments cannot undertake to analyze stomachs or other parts of poisoned animals or to make tests for poisons.

All inquiries and requests should be addressed to the President, giving explicit account of conditions, difficulties, etc., as far as possible, and the matter will be referred promptly to the proper department for further correspondence.

Before sending samples of any kind for examination or analysis, it is best to write for instructions, and thus avoid trouble and delay.

Farmers' Institutes

During the year farmers' institutes are held, under the management of the College, in many counties of the State. The President and professors of agriculture, chemistry, horticulture, dairying, veterinary science, botany and other members of the Faculty take part in these institutes. The effort is made to bring practical information to

the farmer, and to give him the results of scientific investigation in the interest of agriculture. The success thus far attained is most encouraging, and these institutions have become a permanent feature in the work of the College.

Farmers wishing an institute held in their county or community should write to the President.

The State Farmers' Institute, of four days' duration, is held annually at the College during the month of August. Besides the College Faculty, a number of prominent speakers from this and other States attend this institute and participate in the lectures and discussions.

Thomas G. Clemson's Will

The following paragraphs are extracts from Mr. Clemson's will relating to the establishment of the College:

Whereas, I, Thos. G. Clemson, of the County and State aforesaid, did on the 14th of August, 1883, execute my last will and testament, wherein I sought to provide for the establishment of a scientific institution upon the Fort Hill place, and therein provided what sciences should be taught in said institution; and whereas, I am now satisfied that my intention and purpose therein may be misunderstood as intending that no other studies or sciences should be taught in said institution than those mentioned in said will, which was not my purpose or intention: Now, desiring to make my purpose plain, as well as to make some other changes in the disposition of my property than made in said will, I do now make, publish and declare this instrument as and for my last will and testament, hereby revoking all previous wills and codicils by me made, especially the will above referred to, dated August 14th, 1883. Feeling a great sympathy for the farmers of this State, and the difficulties with which they have had to contend in their efforts to establish the business of agriculture upon a proper basis, and believing there can be no permanent improvement in agriculture without a knowledge of those sciences which pertain particularly thereto, I have determined to devote the bulk of my property to the establishment of an Agricultural College upon the Fort Hill place. My purpose is to establish an Agricultural College which will afford useful information to the farmers and mechanics; therefore it should afford thorough instruction in agriculture and the natural sciences connected therewith; it should combine, if practicable, physical with intellectual education, and should be a high seminary of learning in which the graduate of the common schools can commence, pursue and finish a course of studies terminating in thorough theoretic and practical instruction in those sciences and

arts which bear directly upon agriculture. But I desire to state plainly, that I wish the Trustees of said institution to have full authority and power to regulate all matters pertaining to said institution, to fix the course of studies, to make rules for the government of the same, and to change them, as in their judgment experience may prove necessary; but to always bear in mind that the benefits herein sought to be bestowed are intended to benefit agricultural and mechanical industries. I trust I do not exaggerate the importance of such an institution for developing the material resources of the State, by affording its youth the advantage of scientific culture, and that I do not over-rate the intelligence of the Legislature of South Carolina, ever distinguished for liberality, in assuming that such appropriations will be made as will be necessary to supplement the fund resulting from the bequest herein made.

ITEM 1.—I therefore give and devise to my executor hereinafter named, the aforesaid Fort Hill place, where I now reside, formerly the house of my father-in-law, John C. Calhoun, consisting of eight hundred and fourteen acres, more or less, in trust that whenever the State of South Carolina may accept said property as a donation from me, for the purpose of thereupon founding an Agricultural College, in accordance with the views I have hereinbefore expressed, (of which the Chief Justice of South Carolina shall be the Judge,) then my executor shall execute a deed of the said property to the said State and turn over to the same all property hereinafter given as an endowment of said institution, to be held as such by the said State so long as it in good faith devotes said property to the purpose of the donation: *Provided, however,* That this acceptance by the State shall be signified, and a practical carrying out be commenced, within three years from the date of the probate of this my will. During this term of three years, or as much thereof as may elapse before the acceptance or refusal of this donation, my executor shall invest the net produce of the land and other property, such invested fund awaiting the action of the Legislature, and to form a part of the endowment of said institution, if accepted, or to form a part of the endowment of the college or school hereinafter provided for, should the donation not be accepted by the State.

ITEM 2. The following named gentlemen, seven in number, shall be seven of the Board of Trustees, to wit: R. W. Simpson, D. K. Norris, M. L. Donaldson, R. E. Bowen, B. R. Tillman, J. E. Wannamaker, and J. E. Bradley; and the State if it accepts the donation shall never increase the Board of Trustees to a number greater than thirteen in all, nor shall the duties of said Board be taken away or

conferred upon any other men or body of men. The seven Trustees appointed by me, shall always have the right, and the power is hereby given them and their successors, which right the Legislature shall never take away or abridge, to fill all vacancies which may occur in their number by death, resignation, refusal to act, or otherwise. But the Legislature may provide as it sees proper for the appointment or election of the other six Trustees, if it accepts the donation. And I do hereby request the seven Trustees above named, or such of them as may be living, or may be willing to act, to meet as soon after my death as practicable, and organize and at once fill all vacancies that may have occurred, and exert themselves to effectuate my purposes as herein set forth. And I hereby instruct my executor to notify them of their appointment herein, as soon as practicable. The name of this institution is to be "The Clemson Agricultural College of South Carolina."

ITEM 4.—It is my desire that the dwelling house on Fort Hill shall never be torn down or altered, but shall be kept in repair, with all the articles of furniture and vertu, which I hereinafter give for that purpose, and shall always be open for the inspection of visitors; but a part of the house may be used by such of the Professors as the Trustees may direct.

Laws of Congress Relating to the College

AN ACT donating public lands to the several States and Territories which may provide Colleges for the benefit of agriculture and the mechanic arts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be granted to the several States, for the purpose hereinafter mentioned, an amount of public land, to be apportioned to each State a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty: *Provided,* That no mineral lands shall be selected or purchased under the provisions of this Act.

SEC. 2. *And be it further enacted,* That the lands aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections not less than one-quarter of section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands within the limits of such State; and the Secretary of the Interior is

hereby directed to issue to each of the States in which there is not the quantity of public land subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this Act, land scrip to the amount of acres for the deficiency of its distributive share; and scrip to be sold by said State, and the proceeds thereof applied to the uses and purposes prescribed in this Act, and for no other use or purpose whatever: *Provided*, That in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United States subject to sale at private entry, at one dollar and twenty-five cents or less per acre; *and provided further*, That not more than one million acres shall be located by such assignees in any one of the States; *and provided, further*, That no such location shall be made before one year from the passage of this Act.

SEC. 3. *And be it further enacted*, That all the expenses of management, superintendence and taxes, from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom, shall be paid by the States to which they may belong, out of the treasury of said States, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. *And be it further enacted*, That all moneys derived from the sale of the lands aforesaid by the State to which the lands are apportioned, and from the sale of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or of some other safe stocks yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in fifth Section of this Act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this Act to the endowment, support and maintenance of at least one College, where the leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, and in such manner as the Legislature of the States may prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

SEC. 5. *And be it further enacted*, That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts.

1. If any portion of the fund invested as provided by the foregoing section, or any portion of the interest thereon, shall by any act or contingency be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth Section of this Act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this Act may be expended for the purchase of lands for sites of experiment farms whenever authorized by the respective Legislatures of said States.

2. No portion of said fund, nor interest thereon, shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

3. Any State which may take and claim the benefit of the provisions of this Act, shall provide within five years at least not less than one College, as described in the fourth Section of this Act, or the grant to said State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold, and the title to purchasers under the State shall be valid.

4. An annual report shall be made regarding the progress of each College, recording any improvements and experiments made, with their costs and results, and such other matters, including State and industrial statistics, as may be supposed useful; one copy of which shall be transmitted by mail free by each to all the other Colleges which may be endowed under the provisions of this Act, and also one copy to the Secretary of the Interior.

5. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the State at the maximum price, and the number of acres proportionately diminished.

6. No State, while in a condition of rebellion or insurrection against the government of the United States, shall be entitled to the benefit of this Act.

7. No State shall be entitled to the benefit of this Act unless it shall express the acceptance thereof by the Legislature within two years of the date of its approval by the President.

SEC. 6. *And be it further enacted*, That land scrip issued under

the provisions of this Act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three.

SEC. 7. *And be it further enacted*, That the land officers shall receive the same fees for locating land scrip issued under the provisions of this Act as are now allowed for the location of military bounty land warrants under existing laws: *Provided*, That maximum compensation shall not be thereby increased.

SEC. 8. *And be it further enacted*, That the Governors of the several States to which scrip shall be issued under this Act shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved July 2, 1862.

AN ACT to establish Agricultural Experiment Stations in connection with the colleges established in the several States under the provisions of an Act approved July 2, 1862, and of the Acts supplementary thereto.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science, there shall be established, under direction of College or Colleges, or Agricultural Department of Colleges in each State or Territory established, or which may hereafter be established, in accordance with the provisions of an Act approved July 2, 1862, entitled "An Act donating public lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts," or any of the supplements to said Act, a department known and designated as an "Agricultural Experiment Station:" *Provided*, That any State or Territory in which two such Colleges have been or may be so established, the appropriation hereinafter made to such State or Territory shall be equally divided between such Colleges, unless the Legislature of such State or Territory shall otherwise direct.

SEC. 2. That it shall be the object and duty of said Experiment Stations to conduct original researches or verify experiments on the physiology of plants and animals; the disease to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the com-

parative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying condition and needs of the respective States and Territories.

SEC. 3. That in order to secure, as far as practicable, uniformity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to furnish forms, as far as practicable, for the tabulation of results of investigation or experiments; to indicate, from time to time, such lines of inquiry as to him shall seem most important; and, in general, to furnish such advise and assistance as will promote the purposes of this Act. It shall be the duty of each of said stations annually, on or before the first day of February, to make to the Governor of the State or Territory in which it is located a full and detailed report of its operations, including a statement of receipts and expenditures, a copy of which report shall be sent to each of said stations, to the Commissioner of Agriculture, and to the Secretary of the Treasury of the United States.

SEC. 4. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore prescribed, the sum of \$15,000 per annum is hereby appropriated to each State, to be especially provided for by Congress in the appropriations from year to year, and to each Territory entitled under the provisions of Section eight of this Act, out of any money in the treasury proceeding from the sales of public

lands, to be paid in equal quarterly payments, on the first day of January, April, July and October in each year, to the Treasurer or other officer duly appointed by the governing boards of said Colleges to receive the same, the first payment to be made on the first day of October, 1887: *Provided, however,* That out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection, enlargement, or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five per centum of such annual appropriation may be so expended.

SEC. 6. That whenever it shall appear to the Secretary of the Treasury from the annual statement of receipts and expenditures of any of said stations that a portion of the preceding annual appropriation remains unexpended, such amount shall be deducted from the succeeding annual appropriation to each station, in order that the amount of money appropriated to any station shall not exceed the amount actually and necessarily required for its maintenance and support.

SEC. 7. That nothing in this Act shall be construed to impair or modify the legal relation existing between any of the said Colleges and the government of the States or Territories in which they are respectively located.

SEC. 8. That in States having Colleges entitled under this Section to the benefits of this Act and having also Agricultural Experiment Stations established by law separate from said Colleges, such States shall be authorized to apply such benefits to experiments at stations so established by such States; and in case any State shall have established under the provisions of said Act of July 2d aforesaid, an Agricultural Department or Experimental Station, in connection with any University, College, or institution not distinctively an Agricultural College, or School, and such States shall have established or shall hereafter establish a separate Agricultural College or School, which shall have connected therewith an Experimental Farm or Station, the Legislature of such State may apply in whole or in part the appropriation made by this Act, to separate Agricultural College or School, and no Legislature shall by contract expressed or implied disable itself from so doing.

SEC. 9. That the grant of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purposes of said grants: *Provided,* That payment of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of its Leg-

islature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to by the Secretary of the Treasury.

SEC. 10. Nothing in this Act shall be held or construed as binding the United States to continue any payments from the Treasury to any or all the States or institutions mentioned in this Act, but Congress may at any time amend, suspend or repeal any or all the provisions of this Act.

Approved March 2, 1887.

AN ACT to supply a portion of the public lands to the more complete endowment and support of Colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an Act of Congress, approved July second, eighteen hundred and sixty-two.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be, and hereby is, annually appropriated out of any money in the Treasury not otherwise appropriated, arising from the sales of public lands, to be paid as hereinafter provided, to each State and Territory for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts now established, or which may be hereafter established, in accordance with an Act of Congress, approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirtieth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years by an additional sum of one thousand dollars over the preceding year, and the annual amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction: *Provided*, That no money shall be paid out under this Act to any State or Territory for the support and maintenance of a college where a distinction of race or color is made in admission of students, but the establishment and maintenance of such colleges separately for white and colored students shall be held to be a compliance with the provisions of this Act if the funds received in such State or Territory be equitably divided as hereinafter set forth: *Provided*, That in any*

State in which there has been one college established in pursuance of the Act of July second, eighteen hundred and sixty-two, and also in which an educational institution of like character has been established, or may be hereafter established, and is now aided by such State from its own revenue for the education of colored students in agriculture and the mechanic arts, however named or styled, or whether or not it has received money heretofore under the Act to which this Act is an amendment, the Legislature of such State may propose and report to the Secretary of the Interior a just and equitable division of the funds to be received under this Act between one college for white students and one institution for colored students established as aforesaid, which shall be divided into two parts and paid accordingly, and thereupon such institution for colored students shall be entitled to the benefits of this Act and subject to its provisions, as much as it would have been if it had been included under the Act of eighteen hundred and sixty-two, and the fulfillment of the foregoing provisions shall be taken as a compliance with the provision in reference to separate colleges for white and colored students.

SEC. 2. That the sum hereby appropriated to the States and Territories for the further endowment and support of colleges shall be annually paid on or before the thirty-first day of July of each year, by the Secretary of the Treasury upon the warrant of the Secretary of the Interior, out of the Treasury of the United States, to the State or Territorial Treasurer or to such officer as shall be designated by the laws of such State or Territory to receive same, who shall, upon the order of the trustees of the college, or the institution for colored students, immediately pay over said sums to the Treasurers of the respective colleges or other institutions entitled to receive the same, and such Treasurers shall be required to report to the Secretary of Agriculture and to the Secretary of the Interior on or before the first day of September of each year, a detailed statement of the amount so received and of its disbursement. The grants of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purpose of said grants: *Provided*, That payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of Legislature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 3. That if any portion of the moneys received by the designated officer of the State or Territory for the further and more com-

plete endowment, support and maintenance of colleges, or of institutions for colored students, as provided in this Act, shall, by any action or contingency, be diminished or lost, or be misapplied, it shall be replaced by the State or Territory to which it belongs, and until so replaced no subsequent appropriation shall be apportioned or paid to such State or Territory; and no portion of said moneys shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings. An annual report by the President of each of said colleges shall be made to the Secretary of Agriculture, as well as to the Secretary of the Interior, regarding the condition and progress of each college, including statistical information in relation to its receipts and expenditures, its library, the number of its students and professors, and also as to any improvements and experiments made under the direction of any Experiment Stations attached to said colleges, with their costs and results, and such other industrial and economical statistics as may be regarded as useful, one copy of which shall be transmitted by mail to all other colleges further endowed under this Act.

SEC. 4. That on or before the first day of July in each year, after the passage of this Act, the Secretary of the Interior shall ascertain and certify to the Secretary of the Treasury as to each State and Territory, whether it is entitled to receive its share of the annual appropriation for colleges, or of institutions for colored students, under this Act, and the amount which thereupon each is entitled respectively, to receive. If the Secretary of the Interior shall withhold a certificate from any State or Territory of its appropriation the facts and reasons therefor shall be reported to the President, and the amount involved shall be kept separate in the treasury until the close of the next Congress, in order that the State or Territory may, if it should so desire, appeal to Congress from the determination of the Secretary of the Interior. If the next Congress shall not direct such sum to be paid it shall be covered into the treasury. And the Secretary of the Interior is hereby charged with the proper administration of this law.

SEC. 5. That the Secretary of the Interior shall annually report to Congress the disbursements which have been made in all the States and Territories, and also whether the appropriation of any State or Territory has been withheld, and if so, the reasons therefor.

SEC. 6. Congress may at any time amend, suspend or repeal any or all of the provisions of this Act.

Approved August 30, 1890.

State Laws Relating to the College

In November, 1889, the General Assembly passed the following law, authorizing the establishment of the Clemson Agricultural College of South Carolina:

SECTION 1300. The Honorable Thomas G. Clemson having departed this life on the sixth day of April, A. D. 1888, leaving of force his last will and testament, which was duly admitted to probate on the twentieth day of April, 1888, in the office of the Judge of Probate of the County of Oconee, in the State of South Carolina, wherein he devised and bequeathed to his executor, Richard W. Simpson, of Pendleton, South Carolina, a tract of land situated on Seneca River, in Oconee County, in said State, containing eight hundred and fourteen acres, more or less, known as the Fort Hill plantation, as well as all his other property, both real and personal, except certain legacies in the said will mentioned and provided for, all in trust to convey to the State of South Carolina when the said State shall accept the same for the purpose of establishing and maintaining an Agricultural and Mechanical College upon the aforesaid Fort Hill plantation upon the terms and conditions of said will, the State of South Carolina hereby expressly declares that it accepts the devise and bequest of Thomas G. Clemson subject to the terms and conditions set forth in his last will and testament, and the Treasurer of the State is hereby authorized and empowered to receive and securely hold the said property, both real and personal, and to execute all necessary papers and receipts therefor as soon as the said executor shall convey and transfer the said devise and bequest to the State.

SEC. 1301. The deed and transfer of said property to the State having been duly executed and made by the said executor, in accordance with the provisions of said will, an Agricultural and Mechanical College in connection with the aforesaid devise and bequest, to be styled "The Clemson Agricultural College of South Carolina," and situated at Fort Hill, in Oconee County, on the plantation so devised; in which College shall be taught all branches of study pertaining to practical and scientific agriculture and other industries connected therewith, and such other studies as are not inconsistent with the terms of the said will.

SEC. 1302. The said College shall be under the management and control of a Board of thirteen Trustees composed of the seven mem-

bers nominated by said will and their successors and six members to be elected by the Legislature in Joint Assembly.

SEC. 1308. One-half of the Land Scrip Fund heretofore vested by Section 1045 of the General Statutes (1882) in the Board of Trustees of the University of South Carolina is hereby vested in the six members of the Board of Trustees of the Clemson Agricultural College elected by the General Assembly; and the State Treasurer is authorized and required to issue a certificate of State stock in the sum of ninety-five thousand nine hundred dollars, bearing interest at the rate of six per centum per annum, payable semi-annually, to the said six members of the said Board of Trustees, to be held as a perpetual fund, the capital of which shall forever remain undiminished, the income of said fund to be used by said Board of Trustees for the building and maintenance of the said Clemson Agricultural College, in accordance with the purposes for which the said Land Scrip was donated by the Act of Congress in relation thereto.

SEC. 1309. The annual grant of fifteen thousand dollars, commonly known as the Hatch Bill fund, made to the State of South Carolina by the Congress entitled "An Act to establish agricultural experiment stations in connection with the colleges established in the several States under the provisions of an Act approved July second, eighteen hundred and sixty-two, and of the Act supplementary thereto," approved March 2d, 1887, shall be and hereby is, withdrawn from the control of the Board of Trustees of the University of South Carolina, in whom it was vested by an Act entitled "An Act to amend Chapter XX. of the General Statutes, entitled 'Of the University of South Carolina,'" approved December 22, 1887; and the said grant of fifteen thousand dollars is hereby vested in the six members of the Board of Trustees of the Clemson Agricultural College of South Carolina chosen by the General Assembly; and an agricultural experiment station shall be established in connection with the said Clemson Agricultural College, and under the direction of the Board of Trustees thereof, to be supported by said grant according to the provisions of the Act of Congress hereinbefore mentioned.

SEC. 1310. The Department of Agriculture of this State, as heretofore constituted and provided for by law, is abolished, and also the office of Commissioner of Agriculture for this State.

SEC. 1311. All the powers, duties, rights and privileges heretofore vested in and exercised by the Commissioner of Agriculture and the Department of Agriculture of this State are hereby vested in and devolved upon the Board of Trustees of the Clemson Agricultural

College of South Carolina, except that said Board shall not have any rights, powers or privileges in reference to or in connection with the management and control of the rights and interests of the State in the phosphate rock or phosphatic deposits in the navigable streams and marshes thereof.

SEC. 1319. All the privilege tax on fertilizers heretofore required to be paid to the Commissioner of Agriculture shall in the future be paid to the Treasurer of the State, subject to the order of the Board of Trustees of the Clemson Agricultural College of South Carolina; and so much of the money so received as shall be necessary to defray the expenses of the Board in performing the duties now by this Chapter devolved upon them shall be thus used, and the balance shall go to the said College, for its erection and maintenance.

SEC. 1320. A municipal corporation is hereby created, known as Clemson College, the limits of which shall consist of all the lands belonging to the said College and cover all the territory included in a circle formed with the College building as a center, with a radius of five miles, thus making the diameter of the circle ten miles, within which boundaries the jurisdiction of the corporation shall extend. No dispensary shall ever be located at Calhoun.

The General Assembly also passed the following law in reference to the appropriation made by Congress under the provisions of the Act approved August 30th, 1890:

SEC. 1299. All sums which shall be received by the State from the United States Government, under the provisions of the Act of Congress approved August 30th, 1890, entitled "An Act to apply a portion of the public lands to the more complete endowment and support of colleges for the benefit of agriculture and mechanic arts established under the provisions of an Act of Congress approved July 2d, 1862," shall be equally divided between the Colored Normal and Industrial College and Clemson Agricultural College to the purposes specified in said Act.

Graduates, 1896-1903

Below are given the occupations and addresses of the alumni, so far as ascertainable at the College, although in several instances, as indicated, these are not positively known. This preliminary and imperfect list is published here, however, in the hope that it may serve as an aid in the preparation of a complete record of all alumni from the time of graduation, which it is the purpose of the College to compile and publish from time to time in pamphlet form. Graduates, former students, and friends of the institution are requested to co-operate in making this record as nearly complete as possible and in the effort to keep it constantly up to date. The graduates themselves are specially urged to send notice promptly of all changes of occupation or address, promotions, honors, etc.

Information for this record should be addressed to Prof. G. Shanklin, Registrar, Clemson College, S. C.

[NOTE.—Courses pursued are indicated by initials in parentheses: A, agricultural; C, civil engineering; M, mechanical-electrical; T, textile. The numbers accompanying these show years of graduation.]

ADAMS, W. G. (C '00), Civil Engineer, with W. C. Whitner, High Falls, Ga.

ALFORD, N. H. (T '03), Instructor in Manual Training, City Schools, Marion, S. C.

ALL, JOHN E. (A '00), Farmer and Merchant, Allendale, S. C.

ALL, PERCY H. (M '01), Allendale, S. C.

ANDERSON, J. W. (T '01), Chester, S. C. (?)

AULL, BENEDICT M. (M '96), Supt. Pendleton Mfg. Co., Autun, S. C.

AYER, LOUIS W. (A '00), Rockingham, N. C. (?)

BAMBERG, G. E. (M '02), Jeweler, Bamberg, S. C.

BARNWELL, W. H. (M '03), Electrician, Yorkville, S. C.

- BARRE, B. H. (M '02), Electrician, City Light and Power Station, Bennettsville, S. C.
- BARRETT, A. R. (T '02), Chicora Cotton Mills, Rock Hill, S. C.
- BEATY, J. T. (C '03), Liddell Mfg. Co., Charlotte, N. C.
- BLACK, W. E. G. (M '03), U. S. Navy Yard, Charleston, S. C.
- BLAINE, J. MELVILLE (A '96), Farmer, Blackstock, S. C.
- BLEASE, J. W. (M '01), Electrician, Olympia Cotton Mills, Columbia, S. C.
- BOINEAU, C. E. (T '03), Watts Cotton Mills, Laurens, S. C.
- BOULWARE, GEORGE P. (A '96), Supt. Orphanage Farm, Orphanage, S. C.
- BOWEN, JOHN T. (M '96), Draftsman, U. S. Navy Yard, Brooklyn, N. Y.
- BOYKIN, E. B. (A '02), Department of Agriculture, Washington, D. C.
- BRADFORD, J. L. (C '03), Civil Engineer, Seaboard Air Line Railway Co., Portsmouth, Va.
- BRADLEY, J. TATE (M '96), Farmer, Troy, S. C.
- BREAZEALE, JAMES FRANK (A '96), Chemist, Bureau of Soils, Dept. of Agriculture, Washington, D. C.
- BROCKMAN, E., JR. (A '02), Clerk, Hotel St. John, Charleston, S. C.
- BROWN, J. H. (T '02), Merchant, Mountain Rest, S. C.
- BROWNE, D. OSCAR (A '98), Sec.-Treas. Peoples Oil & Fertilizer Co., Anderson, S. C.
- BRYAN, ARTHUR BUIST (A '98), Assist. Professor of English, Clemson College, S. C.
- BRYANT, FRED L. (M '96), Pacolet, S. C.
- BURGESS, JUNIUS M. (A '02), Farmer, Summerton, S. C.
- BURGESS, WILLIAM A. (C '01), Civil Engineer, C. & O. Ry. Co., Pratt, W. Va.
- BUTLER, A. A. (A '01), Supt. Natl. Sand Lime Brick Co., Charleston, S. C.

- CAIN, W. O. (T '03), Issaqueenah Cotton Mills, Central, S. C.
- CALHOUN, J. S., JR., (C '99), Inspector, U. S. Navy Yard, Charleston, S. C.
- CALHOUN, PATRICK N. (M '96), Swift & Co., Macon, Ga.
- CAMPBELL, E. G. (M '02), General Electric Co., Schenectady, N. Y.
- CANNON, H. L. (T '01), Hartsville Cotton Mill, Hartsville, S. C.
- CANNON, R. S. (M '00), General Electric Company, Schenectady, N. Y.
- CANTEY, H. T. (C '02), Civil Engineer, Seaboard Air Line Ry. Co., Odenville, Ala.
- CARPENTER, WADE HAMPTON (M '96), 2d Lieut., U. S. Army, Fort Myer, Va.
- CARR, A. B. (M '02), Buckeye Cotton Oil Co., Jackson, Miss.
- CAUGHMAN, J. E. (M '00), U. S. Navy Yard, Brooklyn, N. Y.
- CHAPMAN, W. E. (T '02), Teacher, Denver, S. C.
- CHEATHAM, J. E. (A '01), Abbeville, S. C.
- CHISOLM, W. B. (M '03), Yard Master, Charleston Mining Co., Charleston, S. C.
- CHREITZBERG, A. M. (M '96), Southern Railway Co., Washington, D. C.
- CHREITZBERG, CHAS. K. (C '99), Chief Engineer, Va. Passenger and Power Co., Richmond, Va.
- CLINKSCALES, G. B. (M '02), Student, Vanderbilt University, Nashville, Tenn.
- CLINKSCALES, LLOYD D. (T '00), Mercantile business, Spartanburg, S. C.
- COLE, W. F. (T '02), Student, Johns Hopkins University, Baltimore, Md.
- COLEMAN, W. W. (M '02), Government Service, Leyte, Philippine Islands.

- COTHRAN, THOS. W. (M '96), Civil Engineer, Seaboard Air Line Ry. Co., Atlanta, Ga.
- COTHRAN, W. B. (T '02), U. S. Navy Yard, Portsmouth, Va.
- CRAWFORD, FRANK (M '02), Inspector, U. S. Navy Yard, Charleston, S. C.
- CROMER, B. C. (T '02), Cotton Mills, Anderson, S. C.
- CULLUM, J. C. (T '03), Shetucket Mfg. Co., Norwich, Conn.
- CUMMINGS, J. P. (T '03), Designer, Laurens Cotton Mills, Laurens, S. C.
- CUNNINGHAM, F. H. (T '03), Whitin Machine Works, Whitinsville, Mass.
- CUNNINGHAM, J. G. (T '03), Mill Engineer, with J. E. Sirrine Co., Greenville, S. C.
- DARLINGTON, WM. R., JR. (T '01), Cotton Mills, Atlanta, Ga.
- DESAUSSURE, F. G. (M '03), Erie Engine Works, Meadville, Pa.
- DODD, H. B. (C '00), Electrician, Valdosta, Ga.
- DONALDSON, J. R. (T '00), Laurens Cotton Mills, Laurens, S. C.
- DOUTHIT, C. (M '02), Buckeye Cotton Oil Co., Jackson, Miss.
- DOWLING, DECANIA (M '96), Hammond Typewriter Co., Columbia, S. C.
- DUCKWORTH, JOS. C. (T '01), Williamston Oil Mill, Williamston, S. C.
- EARL, D. E. (T '03), Issaqueenah Cotton Mills, Central, S. C.
- EARLE, ELIAS P. (M '96), Seneca Iron Works, Seneca, S. C.
- EARLE, J. C. (M '02), General Electric Co., Schenectady, N. Y.
- ELDER, M. L. (M '99), General Electric Co., Schenectady, N. Y.

- ELLIS, E. D. (M '03), City Power and Lighting Plant, Tallahassee, Fla.
- EPPS, H. G. (C '00), Farmer, Midland City, Ala.
- EPPS, S. W. (A '03), Farmer, Kingstree, S. C.
- FAIR, W. N. (T '01), Teacher, New Brookland, S. C.
- FINGER, E. R. (C '03), Civil Engineer, Carolina Bridge Co., Burlington, N. C.
- FLETCHER, B. A. (C '00), Merchant, Gibson, N. C.
- FOLK, J. FRANCIS (A '96), Teacher, Ehrhardt, S. C.
- FORSYTHE, ROBT. G. (M '01), U. S. Navy Yard, Brooklyn, N. Y.
- FOX, L. W. (T '03), Railway Mail Service, Danville, Va.
- FREEMAN, BENJ. (A '03), Supt. Pecan Farm, Mt. Pleasant, S. C.
- FURMAN, CHARLES M., JR. (A '96), Cashier, Coleman-Wagener Co., Charleston, S. C.
- GANDY, T. S. (M '03), General Electric Co., Schenectady, N. Y.
- GARDNER, B. H. (M '03), General Electric Co., Schenectady, N. Y.
- GARRIS, JOHN SAM (A '98), Lawyer, Spartanburg, S. C.
Died Nov. 28, 1903.
- GARRISON, W. D. (A '03), Clemson College Coast Experiment Station, Charleston, S. C.
- GENTRY, CHAS. W. (A '98), Physician, Enoree, S. C.
- GEORGE, W. D. (M '00), Electrician, Olympia Cotton Mills, Columbia, S. C. (?)
- GETTYS, J. E. (T '02), Asst. Supt., Highland Park Mills No. 2, Rock Hill, S. C.
- GIGNILLIAT, C. N. (M '02), General Electric Co., Schenectady, N. Y.
- GLENN, J. P. (T '03), with Wm. S. Glenn, stocks and bonds, Spartanburg, S. C.
- GLENN, T. KNOX (M '01), General Electric Co., Schenectady, N. Y.

- GOODING, PERCY H. (A '96), Merchant and Farmer, Crockettville, S. C.
- GRAY, HARRY K. (A '00), City Post-office, Greenville, S. C.
- GRAY, JOS. J., JR. (C '00), Timber business, Barton, S. C.
- GREEN, H. (M '03), Weston Electric Co., New York, N. Y.
- GUNBY, F. M. (M '02), Electric Light and Power Co., Columbus, Ga.
- HAGOOD, C. B. (T '03), Glenwood Cotton Mills, Easley, S. C.
- HALLUM, RICHARD T. (A '98), County Supt. Education, Pickens, S. C.
- HAMILTON, R. G. (A '96), Physician, Santuc, S. C.
- HANVEY, GEORGE A. J. (A '98), Government Meat Inspection, Kansas City, Mo.
- HANVEY, J. T. (M '98), U. S. Navy Yard, Norfolk, Va.
- HARDIN, G. H. (A '02), Chemist, Sugar Experiment Station, Audubon Park, New Orleans, La.
- HARRALL, J. E. (M '03), United Railways & Electric Co., Baltimore, Md.
- HART, GEO. W. (M '96), Books and School Furnishings, Greenwood, S. C.
- HARVEY, T. M. (M '03), Bell Telephone Co., Charleston, S. C.
- HAYNESWORTH, R. B. (M '03), Electric Light & Power Co., Darlington, S. C.
- HENRY, DAVID HILL (A '98), Instructor in Chemistry, Clemson College, S. C.
- HILL, WM. G. (M '01), Electrician, U. S. Navy Yard, Beaufort, S. C.
- HOLLAND, W. A. (M '03), General Electric Co., Atlanta, Ga.
- HOOKE, JOHN H. (M '98), Asst. Professor of Woodwork, Clemson College, S. C.
- HOOKE, WM. N. (C '99), Alderman Lumber Co., Alcolu, S. C.
- HUGHES, E. T. (A '01), Bureau of Soils, Dept. of Agriculture, Washington, D. C.
- HUMBERT, D. G. (T '03), Monaghan Mills, Greenville, S. C.

- HUNTER, JOSEPH E. (M '96), Instructor in Mathematics, Clemson College, S. C.
- JEFFARIES, JOHN W. (C '99), Student, University of Nashville, Nashville, Tenn.
- JEFFRIES, S. L. (A '03), Teacher, Gaffney, S. C.
- JENNINGS, DAVID (T '02), Designer, Russell Mfg. Co., Middletown, Conn.
- JENNINGS, H. B., JR. (T '02), Designer, Russell Mfg. Co., Middletown, Conn.
- JORDAN, F. M. (M '02), Sec. Seneca Cotton Mills, Seneca, S. C.
- KAIGLER, B. H. (M '03), Alderman Lumber Co., Alcolu, S. C.
- KAIGLER, JAKE G. (C '01), Civil Engineer, Seaboard Air Line Ry., Odenville, Ala.
- KENNEDY, J. LELAND (A '00), Teacher, City Schools, Greenwood, S. C.
- KINSLER, JOHN H. (A '00), Dept. Agriculture, Tea Farm, Pierce, Tex.
- KLUGH, G. F. (A '01), Asst. Expert Drug and Medicinal Investigation, Dept. Agri., Washington, D. C.
- KLUGH, WILLISTON W. (M '96), Asst. Professor of Drawing, Clemson College, S. C.
- KOHN, D. (T '02), Olympia Cotton Mills, Columbia, S. C.
- LANGLEY, P. G. (M '96), General Electric Co., Schenectady, N. Y.
- LARSEN, E. J. (M '02), with D. H. Whitner Construction Co., Charleston, S. C.
- LARSEN, GEORGE A. (T '03), Am. Pipe Mfg. Co., Charleston, S. C.
- LAWRENCE, B. H. (M '03), Darlington, S. C.
- LAWTON, FRANK A. (A '00), Medical Student, Johns Hopkins, Baltimore, Md.
- LAWTON, T. OREGON (A '01), Regal Shoe Co., Boston, Mass.

- LEE, RUDOLPH E. (M '96), Associate Professor of Drawing, Clemson College, S. C.
- LEGERTON, C. W. (T '03), Cotton Mill Machinery, Charlotte, N. C.
- LEWIS, D. G. K. (M '03), General Electric Co., Schenectady, N. Y.
- LEWIS, GUS P. (M '00), Engineer, General Electric Co., Chicago, Ill.
- LEWIS, J. BAXTER (M '01), Electrician, U. S. Navy Yard, Port Royal, S. C.
- LEWIS, J. EARLE (M '99), Construction Engineer, General Electric Co., Columbus, Ohio.
- LISLES, S. E. (C '00), Bookkeeper, McColl, S. C.
- LITTLE, HUGH F. (T '02), Sec. Crescent Mfg. Co., Spartanburg, S. C.
- LIVINGSTON, V. (M '03), General Electric Co., Schenectady, N. Y.
- MCCRARY, H. N. (T '03), Niles Tool Works, Hamilton, O.
- MCCRARY, J. ADGER (M '98), Electrical Expert, Navy Dept., Washington, D. C.
- MCCULLOUGH, L. H. (A '92), Asst. Pathologist, Tropical Station, Dept. Agr., Miami, Fla.
- McFADDEN, WILL HARDIN (A '98), Insurance, Rock Hill, S. C.
- MCGREGOR, G. T. (M '02), Williamston Cotton Mills, Williamston, S. C.
- McLENDON, RALPH (A '99), Lawyer, Bishopville, S. C.
- McLENDON, W. E. (A '01), Bureau of Soils, Dept. of Agriculture, Washington, D. C.
- McSWAIN, C. W. (T '03), Chemist, Whittier Cotton Mills, Chattahoochee, Ga.
- MAHAFFEY, C. B. (M '98), Chief Engineer, General Electric Co., Denver, Colo.
- MARTIN, J. E., JR. (A '02), Eingeineer, Charleston Oil Co., Charleston, S. C.

- MARVIN, H. W. (M '03), Whitehall, S. C.
- MATHIS, ANDREW JACKSON (M '99), General Electric Co.,
Schenectady, N. Y.
- MATHIS, H. MURRAY (A '01), Truck farming, Ocala, Fla.
- MATTHEWS, EDGAR M. (M '01), New York Telephone Co.,
N. Y. City.
- MAULDIN, C. E. (A '00), Student, University of Pa., Phil-
adelphia, Pa.
- MAULDIN, IVY M. (M '96), Lawyer, Pickens, S. C.
- MAULDIN, L. O. (A '00), Physician, Pickens, S. C.
- MAXWELL, JEFF D., JR. (M '98), Elec. Engineer, Street Ry.
& Light Co., Spartanburg, S. C.
- MEADOR, J. D. (M '02), Union Co. (address ?)
- MILLING, A. J. (M '03), Farmer, Greenwood, S. C.
- MINUS, JOS. P., JR. (A '98), Armour Packing Co., Nashville,
Tenn.
- MITCHELL, G. F. (A '02), Tea Culture Investigation, U. S.
Dept. of Agriculture, Charleston, S. C.
- MOORE, J. HOWARD (A '96), Teacher, Santuc, S. C.
- MOORE, PERCY W. (A '98), Mercantile business, Birming-
ham, Ala. (?)
- MOORMAN, THOS. S. (A '96), 1st Lieut. U. S. Army, Ft. St.
Michael, Alaska.
- MORRISON, G. L. (T. '03), Wiscassett Cotton Mills, Alber-
marle, N. C.
- MUNRO, T. H. (M '02), Electric Light & Power Co., Gaffney,
S. C.
- NEWELL, N. W. (M '03), Road Machine Co., Birmingham,
Ala.
- NEWELL, WM. H. (M '01), Anderson, S. C.
- NEWMAN, Q. B. (M '01), U. S. Revenue Cutter "Rush,"
Sitka, Alaska.
- NORRIS, A. PRUE (A '00), Atlanta, Ga. (?)
- NORRIS, F. K. (A '02), Vance, S. C.
- NORRIS, G. FURMAN (M '03), Student, Vanderbilt Univer-
sity, Nashville, Tenn.

- PEARMAN, F. E. (T '02), Acme Drug Co., Anderson, S. C.
PEARMAN, S. D. (T '00), U. S. Census Bureau, Washington, D. C.
PEGUES, B. F. (A '03), Lawyer, Cheraw, S. C.
PEGUES, OLIN M. (M '96), Farmer, Kollocks, S. C.
PERRIN, T. S. (T '03), Inspector American Moistening Co., Atlanta, Ga.
PHILLIPS, T. R. (M '02), Electrician, Ry., Light and Power Co., Birmingham, Ala.
PICKETT, E. H. (T '01), Beck & Gregg Hdw. Co., Atlanta, Ga.
POE, H. T., JR. (M '02), with Lockwood, Greene & Co., Greenville, S. C.
POLLITZER, H. R. (M '03), Street Ry. Co., Columbus, Ga.
PRESCOTT, W. T. (T '02), Edgefield Co. (address ?)
PRIOLEAU, J. FORD (M '03), Birmingham, Ala.
QUATTLEBAUM, P. J. (M '03), Electric Light & Power Co., Bishopville, S. C.
RAMSEY, H. L. (T '01), Pacolet Cotton Mill, Pacolet, S. C.
RAWL, B. H. (A '00), Asst. in Dairying & Animal Industry, Clemson College, S. C.
REEVES, ROBT. N. (A '01), (address ?)
REID, C. L. (C '02), Civil Engineer, with W. C. Whitner, Rock Hill, S. C.
RHODES, F. K. (T '03), Atlantic Coast Line Ry. Shops, Wilmington, N. C.
RIGGS, ARTHUR F. (M '00), Construction Engineer, General Electric Co., Munising, Mich.
ROBERTSON, BENJ. F. (A '96), Asst. Chemist, South Carolina Experiment Station, Clemson College, S. C.
ROBERTSON, J. T. (M '03), Inspector, Southeastern Tariff Association, Birmingham, Ala.
ROBERTSON, S. M. (A '02), Chemist, Virginia-Carolina Chemical Co., Richmond, Va.
RODDEY, J. H. (M '01), General Electric Co., Schenectady, N. Y.

- RODGER, J. M. (M '02), Electrical Engineering Co., St. Louis, Mo.
- ROGERS, D. F. (M '98), Westinghouse Electric Mfg. Co., Pittsburg, Pa.
- SADLER, D. H. (M '03), Catawba Power Co., Rock Hill, S. C.
- SAHLMANN, H. C. (C '03), Draftsman, Volk-Murdoch Co., Charleston, S. C.
- SALLEY, D. H. (A '02), Farmer, Salley, S. C.
- SALLEY, J. E. (M '01), Electrician and Engineer, City Water and Light Station, Orangeburg, S. C.
- SANDERS, W. M. A. (T '01), Clinton Cotton Mills, Clinton, S. C.
- SARRATT, W. JUDSON (A '98), Merchant, Member of Legislature, Gaffney, S. C.
- SCOTT, W. H. (T '01), Augusta, Ga.
- SEASE, LAWRENCE A. (M '96), Pres. Oil Mill, Prosperity, S. C.
- SEIGLER, C. H. (M '02), Aiken Co. (address ?)
- SHAW, T. C (T '02), Eureka Cotton Mills, Chester, S. C.
- SHEALEY, A. S. (A '99), Asst. in Veterinary Science, Clemson College, S. C.
- SIMPSON, JOHN G. (M '96), Cotton Mills, Cartersville, Ga.
- SIRTON, M. A. (M. '02), Va. Passenger & Power Co., Richmond, Va.
- SLOAN, B. FRANK (A '96), Physician, Walhalla, S. C.
- SLOAN, S. MAXWELL (T '00), 819 Washington St., Greenville, S. C.
- SMITH, HERBERT G. (A '99), Sec. Liberty Cotton Mills, Liberty, S. C.
- SMITH, J. BERNARD (A '98), Teacher, Williams, S. C. (?)
- SNEED, W. F. (M '02), General Electric Co., Schenectady, N. Y.
- SPENCER, J. H. (T '02), Lancaster Cotton Mills, Lancaster, S. C.

- SPENCER, ROBT. LATHAM (A '98), Physician, Bennettsville, S. C.
- SPENCER, T. B. (T '02), Eureka Cotton Mills, Chester, S. C.
- STEWART, S. C. (M '02), U. S. Steel Corporation, Pittsburg, Pa.
- STOKES, H. G. (M '02), Birmingham, Ala.
- STRIBLING, J. H. (M '99), Va. Passenger and Power Co., Richmond, Va.
- SULLIVAN, D. A. J. (M '02), S. S. "City of Macon," New York, N. Y.
- SULLIVAN, J. FRANCIS (M '00), Electrical Draftsman, U. S. Navy Yard, Brooklyn, N. Y.
- SWYGERT, GEO. H. (M '98), Electrical Draftsman, Navy Dept., Washington, D. C.
- TALBERT, A. D. (M '98), Dept. Commerce and Labor, Washington, D. C.
- TAYLOR, IRA B. (A '99), Farmer and Merchant, Greenwood, S. C.
- TEMPLETON, W. G. (T '02), Belton Cotton Mills, Belton, S. C.
- TERVEN, LEWIS A. See *Turnipseed*.
- TILLMAN, BENJ. R., JR. (A '96), Private Secretary to Senator B. R. Tillman, Washington, D. C.
- TILLMAN, H. C. (M '03), Law Student, Washington and Lee University, Lexington, Va.
- TINDAL, A. JACK (M '96), Farmer, Silver, S. C.
- TINSLEY, J. B. (A '02), Farmer, Union, S. C.
- TISON, HUGH R. (A '01), Physician, Allendale, S. C.
- THOMSON, J. CROCKETT (A '99), Chemist, Bartow, Fla.
- TOMPKINS, FRANK G. (A '96), Lawyer, Columbia, S. C.
- TURNER, THOMAS H. (M '99), Anderson Water, Light and Power Co., Anderson, S. C.
- TURNIPSEED, B. RHETT (A '96), Pastor M. E. Church, Aiken, S. C.

- TURNIPSEED (now TERVEN) LEWIS A. (M '99), Nernst Lamp Co., Pittsburg, Penn.
- TUTEN, T. HUGH (M '96), Physician, Brunson, S. C.
- VOGEL, THEO. R. (M '98), Draftsman, U. S. Navy Yard, Warrington, Fla.
- WALKER, J. NORMAN (A '00), Merchant and Farmer, Appleton, S. C.
- WALKER, TOM JEFF (M '98), with W. F. Furtick, Columbia, S. C.
- WALKER, W. FLOWERS (A '99), Chemist, Bartow, Fla.
- WARD, S. M., JR. (M '02), General Electric Co., Schenectady, N. Y.
- WARDLAW, W. W. (M '96), Farmer and Merchant, Troy, S. C.
- WATKINS, J. B. (M '02), Saluda Co. (address ?)
- WELLS, CLAUDE H. (A '00), Teacher, Talatha, S. C. (?)
- WERTS, LEROY A. (A '96), Sec. Belton Cotton Mills, Belton, S. C.
- WHITNEY, J. B. (T '03), Cotton Dealer, Augusta, Ga.
- WIGGINS, GORDON (A '98), Farmer, Holly Hill, S. C.
- WIGHTMAN, W. M. (M '03), N. Y. Telephone Co., New York, N. Y.
- WILLIAMS, R. G., JR. (T '03), Issaqueenah Cotton Mills, Central, S. C.
- WILSON, H. A. (M '02), Mgr. Climax Electrical Supply and Construction Co., Bluefields, W. Va.
- WISE, J. T. (M '98), Government Inspector, Dry Tortugas, Fla.
- WYLIE, J. C. (M '03), Electrical Draftsman, Navy Dept., Washington, D. C.
- WYSE, J. H. (C '03), Civil Engineer, Gate City, Ala.
- YOUNG, T. B. (A '03), Drug and Medicinal Plant Investigation, Dept. of Agr., Washington, D. C.
- ZEIGLER, M. E. (A '02), Law Student, Private Sec. to Congressman Lever, Washington, D. C.

Students, 1903-1904

Senior Class

NAME	COURSE	COUNTY
V. Baker	Mech. Elec.	Cherokee
G. R. Barksdale	Mech. Elec.	Greenwood
E. F. Brown	Mech. Elec.	Anderson
S. G. Bryan	Agri.	Williamsburg
J. R. Connor	Agri.	Berkeley
P. C. Cothran	Civil	Greenwood
H. W. Crouch, Jr.	Civil	Charleston
P. L. Elias	Mech. Elec.	Charleston
S. J. Faris	Mech. Elec.	York
S. I. Felder	Mech. Elec.	Orangeburg
S. Ford	Text.	Fairfield
John Gelzer, Jr.	Mech. Elec.	York
M. A. Grace	Mech. Elec.	Charleston
V. B. Hall	Mech. Elec.	York
F. T. Hamlin	Text.	Anderson
A. M. Henry	Mech. Elec.	Abbeville
J. M. Hill	Mech. Elec.	Bamberg
S. T. Hill	Mech. Elec.	Abbeville
A. E. Holman	Mech. Elec.	Orangeburg
T. N. Lide	Mech. Elec.	Anderson
L. Lipscomb	Civil	Cherokee
G. W. McIver	Mech. Elec.	Charleston
W. M. McWhorter	Mech. Elec.	Anderson
H. M. Manigault, Jr.	Mech. Elec.	Dorchester
H. W. Matthews	Mech. Elec.	Barnwell
W. F. Mauldin	Agri.	Pickens
John Maxwell	Mech. Elec.	Anderson
R. E. Miller	Text.	Pickens
I. H. Morehead	Mech. Elec.	Greenville

NAME	COURSE	COUNTY
J. C. Norton	Mech. Elec.	Horry
S. O. O'Bryan	Agri.	Williamsburg
V. C. Platt	Mech. Elec.	Berkeley
C. I. Preacher	Mech. Elec.	Barnwell
C. Y. Reamer	Mech. Elec.	Richland
O. M. Roberts	Mech. Elec.	Greenwood
J. McM. Schorb	Mech. Elec.	York
J. P. Tarbox	Mech. Elec.	Georgetown
W. L. Templeton	Mech. Elec.	Abbeville
E. A. Thornwell	Mech. Elec.	York
W. P. Walker	Agri.	Barnwell
H. S. White	Mech. Elec.	Berkeley
J. A. Wier	Mech. Elec.	Greenwood
J. F. Williams	Text.	Pickens
V. McB. Williams	Text.	Greenville

Junior Class

C. P. Ballenger	Civil	Oconee
H. W. Barre	Agri.	Lexington
W. S. Beaty	Text.	Anderson
M. Bell	Mech. Elec.	Georgia
L. E. Boykin	Agri.	Darlington
W. T. Brock	Mech. Elec.	Chesterfield
Judson Brodie	Text.	Aiken
J. C. L. Caldwell	Mech. Elec.	Abbeville
H. F. Cheatham	Mech. Elec.	Abbeville
F. E. Cope	Text.	Orangeburg
E. P. Crouch	Civil	Charleston
S. C. Dean	Text.	Anderson
E. B. Dibble	Mech. Elec.	Charleston
T. K. Elliott	Mech. Elec.	Fairfield
T. R. Ellison	Mech. Elec.	Fairfield
R. P. Evans, Jr.	Mech. Elec.	Charleston

NAME	COURSE	COUNTY
J. A. Forsythe, Jr.	Civil	North Carolina
A. A. Gandy	Text.	Darlington
J. C. Goggans, Jr.	Mech. Elec.	Newberry
G. B. Holland	Mech. Elec.	Oconee
E. H. Jones	Mech. Elec.	Abbeville
C. P. Josey	Mech. Elec.	Darlington
B. O. Kennedy	Mech. Elec.	Kershaw
F. W. Lachicotte, Jr.	Mech. Elec.	Georgetown
C. E. A. Lathrop	Mech. Elec.	Orangeburg
B. F. Lee	Mech. Elec.	Anderson
C. J. Lemmon	Agri.	Lee
R. L. Link	Mech. Elec.	Abbeville
E. R. McIver	Agri.	Darlington
J. B. Moseley, Jr.	Mech. Elec.	Abbeville
M. L. Murph	Civil	Orangeburg
C. H. Newman	Mech. Elec.	Chesterfield
J. J. O'Hagan	Text.	Charleston
J. G. Parks	Civil	Edgefield
E. E. Porter	Metallurgy	Cherokee
J. C. Richardson, Jr.	Mech. Elec.	Hampton
F. M. Routh	Mech. Elec.	Oconee
J. W. Ruff	Mech. Elec.	Charleston
M. B. Sams	Text.	Cherokee
C. C. Schirmer, Jr.	Mech. Elec.	Charleston
H. R. Sherard	Mech. Elec.	Anderson
J. R. S. Siau, Jr.	Mech. Elec.	Georgetown
L. P. Slattery	Civil	Greenville
Simon Sorentrue	Mech. Elec.	Orangeburg
W. B. Sparkman	Mech. Elec.	Georgetown
A. J. Spear	Mech. Elec.	Abbeville
F. R. Sweeny	Mech. Elec.	Spartanburg
D. B. Swygert	Mech. Elec.	Laurens
W. H. Taylor	Civil	Oconee
C. Webb	Mech. Elec.	Greenwood

NAME	COURSE	COUNTY
W. S. Weston	Mech. Elec.	Richland
F. C. Wise	Civil	Richland
W. H. Wise	Civil	Barnwell
R. H. Witherspoon	Mech. Elec.	Anderson
L. S. Wood	Mech. Elec.	Cherokee

Sophomore Class

C. B. Abell	Mech.	Chester
D. G. Adams	Mech.	Darlington
F. G. Alexander	Mech.	Charleston
W. D. Anderson	Agri.	Cherokee
J. H. Barksdale	Mech.	Greenwood
T. F. Barton, Jr.	Mech.	Orangeburg
W. A. Beaty	Agri.	Fairfield
W. Beckett	Mech.	Charleston
O. H. Bissell, Jr.	Mech.	Charleston
J. C. Boesch	Mech.	Charleston
E. C. Breese	Mech.	North Carolina
J. A. Brice, Jr.	Mech.	Fairfield
A. L. Brunson, Jr.	Mech.	Edgefield
I. W. Bull	Mech.	Orangeburg
T. B. Caldwell	Agri.	Spartanburg
E. P. Campbell	Text.	Dorchester
S. W. Cannon	Mech.	Newberry
L. F. Carpenter	Mech.	Anderson
D. F. Cherry	Agri.	Charleston
A. F. Cleveland	Agri.	Spartanburg
C. Coles	Mech.	Richland
A. H. Cottingham	Text.	Marion
W. H. Crawford	Mech.	Richland
P. S. Cromer	Mech.	Abbeville
W. A. C. DeLorme	Agri.	Darlington
O. L. Derrick	Text.	Lexington

NAME	COURSE	COUNTY
T. E. Drew	Mech.	Colleton
A. P. DuBose	Mech.	Kershaw
F. M. Dwight, Jr.	Mech.	Sumter
C. F. Elliott	Agri.	Fairfield
A. G. Ellison	Mech.	Fairfield
L. Fields	Agri.	Darlington
J. A. Gelzer	Mech.	York
J. R. Godley	Mech.	Colleton
T. L. Goodwin	Mech.	Anderson
R. D. Graham	Mech.	Sumter
C. A. Grainger	Text.	Horry
C. Hanvey	Mech.	Abbeville
S. P. Harper	Mech.	Williamsburg
L. L. Harris	Mech.	Anderson
J. W. Hicklin	Mech.	Chester
D. H. Hill	Text.	Abbeville
H. M. Hill	Mech.	Abbeville
L. R. Hoyt	Mech.	Sumter
T. B. Jacobs	Agri.	Lexington
H. S. Jenkins	Mech.	Barnwell
J. E. Johnson	Agri.	Florence
S. L. Johnson	Text.	Charleston
W. A. Keenan	Mech.	Richland
T. E. Keitt	Agri.	Oconee
R. M. Kennedy, Jr.	Mech.	Kershaw
J. A. Killian, Jr.	Mech.	Richland
L. Klinck	Text.	Charleston
W. J. Latimer	Text.	Abbeville
H. G. Lewis	Agri.	Oconee
A. R. McAliley	Mech.	Chester
J. H. McClain	Agri.	Spartanburg
F. B. McCoy	Mech.	Charleston
C. W. Mack	Mech.	Orangeburg

NAME	COURSE	COUNTY
J. A. McKeown	Mech.	Chester
C. McLaurin	Agri.	Marlboro
F. B. McLaurin	Text.	Marlboro
B. H. Martin	Mech.	Pickens
L. B. Martin	Agri.	Oconee
A. L. Matthews	Mech.	Newberry
A. A. Merrick	Mech.	Oconee
W. C. Moore	Agri.	Lee
J. M. Moss, Jr.	Agri.	Orangeburg
W. M. O'Bryan	Agri.	Williamsburg
H. A. Phelps	Mech.	Sumter
J. V. Phillips	Mech.	Cherokee
C. K. Pollitzer	Mech.	Beaufort
W. A. Putnam	Mech.	Laurens
J. A. Ramey	Agri.	Abbeville
J. W. Rasor	Agri.	Abbeville
J. J. Rauch	Text.	Saluda
J. H. Reid	Mech.	Anderson
S. F. Reid	Text.	Abbeville
K. O. Rinehart	Mech.	Saluda
A. W. Robinson	Mech.	Orangeburg
W. R. Sammons	Mech.	Richland
W. A. Sanders	Text.	Anderson
M. A. Savage	Mech.	Colleton
F. B. Schirmer	Mech.	Charleston
H. W. Schumpert	Mech.	Newberry
A. McL. Shealy	Agri.	Saluda
N. P. Shuler	Mech.	Berkeley
J. A. Simmons	Text.	Laurens
L. S. Sitton	Text.	Anderson
W. R. Smith	Mech.	Charleston
Oscar Smoak	Mech.	Orangeburg
L. G. Southard	Biology	Union

NAME	COURSE	COUNTY
A. W. Stepp	Mech.	Anderson
T. E. Stokes	Agri.	Darlington
H. P. Stuckey	Mech.	Darlington
J. C. Summers	Agri.	Orangeburg
F. E. Thomas, Jr.	Mech.	Sumter
W. C. Thompson	Mech.	Anderson
E. L. Trenholm	Mech.	Richland
N. Wakefield	Text.	Anderson
E. M. Walker	Mech.	Edgefield
L. W. Walker	Mech.	Clarendon
L. C. Wanamaker	Agri.	Orangeburg
F. E. Watkins	Mech.	Anderson
S. L. Webb	Mech.	Charleston
W. P. White	Mech.	Beaufort
A. N. Whiteside	Mech.	Chester
P. E. Wilbur	Mech.	Charleston
W. C. Wilbur	Text.	Charleston
T. H. J. Williams, Jr.	Mech.	Charleston
J. E. Williamson	Mech.	Sumter
W. C. Winn	Agri.	Abbeville
R. Y. Winters	Agri.	Darlington
T. H. Winters	Text.	Darlington
J. N. Wright	Mech.	Laurens
S. R. Zimmerman	Text.	Greenville

Freshman Class

NAME	COUNTY
D. Alexander.....	Spartanburg
A. J. Allen.....	Marlboro
R. L. Allston	Georgetown
J. F. Arthur.....	Kershaw
B. H. Atkinson	Marion
W. B. Aull	Anderson
J. B. Bailey	Greenwood

NAME	COUNTY
M. H. Banks.....	Orangeburg
A. T. Beaver.....	Georgia.
J. F. Belue.....	Cherokee
C. W. Best.....	North Carolina
V. Bethea	Marion
T. L. Bissell.....	Charleston
L. R. Boggs.....	Pickens
F. Bolt....	Anderson
J. T. Bolt.....	Anderson
S. I. Bond.....	Beaufort
L. C. Boone	Orangeburg
S. A. Boozer.....	Newberry
C. E. Bramlette	Laurens
H. C. Brawley	Chester
T. N. Bristow	Marlboro
A. K. Britt	Abbeville
A. E. Brock	Clarendon
B. C. Brown	York
J. J. Brown	Spartanburg
P. J. Brown	Pickens
J. Carson Brunson	Florence
D. C. Bryan	Williamsburg
J. M. Bryan	Charleston
F. C. Bryant	Orangeburg
F. J. Burriss	Anderson
C. W. Busch	Aiken
A. L. Campbell	Hampton
W. E. Campbell	Beaufort
B. G. Cannon	Darlington
J. P. Carey, Jr.....	Pickens
B. D. Carter.....	Colleton
F. F. Carver	Spartanburg
R. F. Cason.....	Anderson
H. S. Chapman.....	Lexington

NAME	COUNTY
J. F. Claffy.....	Orangeburg
J. C. Clark	Marion
F. A. Connor	Greenwood
N. G. Cooner	Lexington
E. A. Crawford	York
W. H. G. Crawford.....	Anderson
H. C. Crews.....	Greenwood
H. C. Crum	Richland
G. D. Curtis	Georgia
F. P. Cuthbert.....	Dorchester
R. E. Dalton.....	Greenville
J. S. Darby, Jr.....	Chester
J. P. Darden, Jr.....	Spartanburg
L. E. Dew.....	Marion
W. F. Dobey.....	Aiken
F. E. Donnald	Greenwood
R. W. K. DuBose.....	Darlington
J. B. Duckett.....	Anderson
J. W. Duckett	Greenwood
D. J. Dunlop	Williamsburg
C. E. Durant.....	Colleton
T. D. Eason.....	Charleston
R. A. Easterling	Barnwell
J. Ehrhardt	Bamberg
H. B. Ellis.....	Greenwood
R. T. Farley.....	Spartanburg
R. M. Felder.....	Clarendon
L. E. Fitzsimons	Charleston
G. H. Folk.....	Newberry
S. L. Fort.....	Cherokee
D. M. Fraser.....	Barnwell
R. F. Fraser.....	Georgetown
J. O. Freeman, Jr.....	Charleston
F. M. Furtick.....	Lexington

NAME	COUNTY
T. W. Gaines.....	Greenwood
W. A. Gantt.....	Aiken
E. V. Garrett.....	Laurens
H. E. Giles.....	Greenwood
A. L. Gilliam.....	Abbeville
C. C. Gilliam.....	Abbeville
R. G. Harris.....	Laurens
E. A. Harriss.....	Georgia
B. C. Hester.....	Abbeville
A. S. Heyward.....	Georgia
J. B. Heyward, Jr.....	Georgia
J. G. Holland.....	Edgefield
D. S. Hollis.....	Chester
W. H. L. Homesley.....	York
A. V. Hooks.....	Horry
L. S. Horton.....	Anderson
P. LaV. Howle.....	Darlington
J. S. Hughes.....	Edgefield
C. H. Jackson.....	Marion
J. M. Jackson.....	Orangeburg
C. E. Jones.....	Lexington
G. R. Jones.....	Sumter
J. R. Jones.....	Abbeville
G. H. Kaigler.....	Lexington
E. M. Kaminer.....	Richland
E. H. Kinsler.....	Richland
A. M. Klugh.....	Greenwood
W. A. Latimer, Jr.....	Chester
H. L. Law.....	Darlington
H. F. League.....	Greenville
S. L. Lebby.....	Charleston
A. C. Lee.....	Anderson
R. J. Lemaster.....	Cherokee
R. H. Lemmon.....	Fairfield

NAME	COUNTY
P. Lykes.....	Richland
J. M. McCown.....	Anderson
E. O. McCreight, Jr.....	Kershaw
E. D. McCutchan.....	Sumter
J. E. McIver.....	Darlington
O. McKinney.....	Anderson
J. W. McLendon.....	Florence
J. McC. Massey.....	York
J. M. Miller.....	Lexington
H. P. Moses.....	Sumter
H. M. Muller.....	Lexington
O. W. Newman.....	Chesterfield
P. B. O'Neal	Anderson
J. F. Ouzts, Jr.....	Greenwood
R. G. Owens.....	Anderson
J. M. Paulling	Orangeburg
S. McC. Pennel.....	Abbeville
T. Pennel.....	Abbeville
L. W. Perrin, Jr.....	Abbeville
S. R. Perrin.....	Union
D. B. Peurifoy, Jr.....	Saluda
M. M. Platt.....	Berkeley
E. B. Plenge.....	Charleston
C. T. Pottinger.....	Georgia
E. S. Prevost.....	Anderson
P. Quattlebaum.....	Horry
W. L. Rambo.....	Greenwood
T. F. Ray, Jr.....	Laurens
O. M. Reid.....	Anderson
R. A. Reid.....	Anderson
R. G. Richardson.....	Beaufort
N. T. Rivers.....	Chesterfield
T. G. Robertson.....	Laurens
L. B. Rogers.....	Marion

NAME	COUNTY
J. R. Salley.....	Orangeburg
G. DuP. Sanders	Barnwell
E. L. Saunders.....	York
W. L. Schachte.....	Charleston
R. L. Scott	Edgefield
T. M. Scott.....	Aiken
W. O. Scott.....	Edgefield
M. T. Scruggs.....	Fairfield
J. W. Shealy.....	Lexington
E. M. Shingler.....	Charleston
C. F. Simmons.....	Greenwood
H. P. Sitton, Jr.....	Anderson
W. P. Sloan.....	Anderson
J. D. Smith.....	Anderson
J. M. Smith.....	Anderson
P. W. Spencer.....	York
W. C. Sproles.....	Greenwood
F. M. Stephenson.....	Lancaster
W. H. Stevens.....	Greenville
W. L. Stone.....	Colleton
C. P. Sullivan.....	Anderson
H. K. Sullivan.....	Anderson
J. W. Sullivan	Anderson
J. W. M. Sullivan.....	Laurens
J. M. Symmes.....	Orangeburg
A. B. Taylor.....	Pickens
J. S. Taylor.....	Oconee
R. T. Taylor.....	Anderson
W. H. Thomas.....	Greenville
R. R. Tolbert.....	Greenwood
G. S. Turner.....	Cherokee
H. M. Turner.....	Laurens
D. V. Walker, Jr.....	Fairfield
J. L. Walker.....	Clarendon

NAME	COUNTY
C. W. Wannamaker.....	Orangeburg
W. W. Wannamaker.....	Orangeburg
W. P. Watkins.....	Anderson
W. W. Webb.....	Anderson
M. Wescoat.....	Dorchester
C. L. Williamson, Jr.....	Sumter
L. S. Wolfe, Jr.....	Orangeburg
D. Wood.....	Greenville
M. A. Woods.....	Clarendon
W. H. Wylie, Jr.....	York
S. T. Zemp.....	Kershaw

Preparatory Class

L. F. Adams.....	Union
T. S. Allen.....	Abbeville
H. Anderson.....	Spartanburg
M. C. Antley.....	Orangeburg
S. W. Arrington.....	Greenwood
G. M. Barnett.....	Oconee
F. M. Barton.....	Anderson
G. D. Bellinger, Jr.....	Barnwell
J. E. B. Bennett.....	Spartanburg
O. J. O. Bennett.....	Spartanburg
W. W. Blair.....	York
J. L. Boyd.....	Laurens
W. F. Bradburn.....	Newberry
R. H. Briggs.....	Laurens
D. C. Britt.....	Abbeville
W. J. Brockinton.....	Williamsburg
B. St. L. Brooks.....	Greenwood
E. M. Brown.....	Charleston
F. L. Brown.....	Spartanburg
W. W. Brown.....	Clarendon
R. W. Bryan.....	Georgetown

NAME	COUNTY
G. W. Bussey.....	Anderson
A. F. Butler.....	Colleton
E. F. Bynum.....	Fairfield
W. A. Byrd.....	North Carolina
W. P. Byrd.....	Darlington
C. P. Callison.....	Greenwood
W. C. Camp.....	Cherokee
R. Carmichael	Marion
J. K. Carwile.....	Abbeville
C. Clinkscales.....	Abbeville
J. W. Cochran.....	Abbeville
H. L. Cogburn.....	Edgefield
P. L. Cogburn.....	Edgefield
W. W. Coulliette.....	Clarendon
B. H. Covington.....	Marlboro
E. B. Crosby.....	Oconee
L. C. Cummings.....	Anderson
W. H. Cunningham.....	Lancaster
A. S. Cutts.....	Georgia
J. R. Davis.....	Laurens
A. Dickson	Oconee
C. G. Dorman.....	Spartanburg
C. O'N. Dougherty.....	Orangeburg
L. E. DuBose.....	Florence
W. L. Easterlin	Colleton
I. M. Edwards.....	Marion
L. C. Eidson.....	Newberry
L. Estes.. ..	Spartanburg
G. Etheredge.....	Orangeburg
T. E. Fairey	Orangeburg
W. E. Freeman.....	Pickens
J. J. Fretwell, Jr.....	Anderson
L. Fretwell	Anderson
S. E. Frey.....	Spartanburg

NAME	COUNTY
H. H. Fuller	Laurens
M. F. Galloway.....	Darlington
Ernest Garrett.....	Laurens
W. K. Glenn.....	Anderson
J. F. Glover.....	Orangeburg
R. T. Graham	Lexington
H. L. Grainger.....	Horry
E. T. Gregory.....	Hampton
T. D. Grimshawe.....	North Carolina
LeR. H. Habenicht.....	Fairfield
J. F. Haigler.....	Orangeburg
A. K. Hammet.....	Richland
A. Happoldt	Charleston
D. N. Harris.....	Richland
M. W. Hellams.....	Laurens
W. N. Henderson.....	Greenwood
H. H. Holmes.....	Charleston
J. R. Hudson.....	Greenville
K. McI. James.....	Darlington
D. G. Johnson.....	Florence
F. M. Johnson.....	Colleton
J. C. Johnson.....	Laurens
O. J. C. Johnson.....	Aiken
C. Jones... ..	Richland
L. E. Kaigler.....	Lexington
A. Keasler	Anderson
W. A. King	Abbeville
W. M. Kirby.....	Abbeville
W. J. Lanham	Edgefield
R. R. Lemaster	Cherokee
J. P. Lewis, Jr.....	Oconee
S. C. Little.....	Spartanburg
L. C. Lockman.....	Spartanburg
W. C. Lucas	Georgetown

NAME	COUNTY
J. A. Lyon	Edgefield
D. J. McAlhany...	Orangeburg
J. M. McAlhany.....	Orangeburg
J. O. McCelvey.....	Abbeville
J. T. McLane	Abbeville
J. N. McLaurin	Kershaw
P. W. Major.....	Anderson
C. W. Marston.....	Virginia
G. C. Martin.....	Lexington
J. P. Martin.....	Colleton
J. W. Mathis	Clarendon
A. B. Means	Anderson
L. B. Merritt	Anderson
H. C. Miller.....	Pickens
A. L. Moore	Laurens
E. Morris.....	Pickens
R. E. Nickles.....	Abbeville
G. E. Parrott.....	Darlington
R. E. Patterson	Richland
F. C. Poag	Lancaster
E. B. Reeves.....	Charleston
H. B. Richardson	Clarendon
H. L. Rivers.....	Greenwood
T. Rosse	Darlington
C. C. Royall	Charleston
W. Santos ..	Beaufort
J. H. Seale	Sumter
A. T. Shingler	Georgia
F. S. Shirley	Anderson
E. H. Shuler	Aiken
J. F. Simmons	Laurens
L. Simpson	Anderson
J. B. Smith.....	Marion
K. E. Stello	Charleston

NAME	COUNTY
J. J. Stringfellow	Chester
J. G. Suggs	Darlington
G. W. Summer, Jr.	Newberry
C. H. Tallon	Lee
C. P. Thomas	Anderson
W. K. Thompson, Jr.	Kershaw
R. R. Toole	Aiken
G. M. Truluck	Sumter
F. C. Vallentine	Orangeburg
J. O. Vernon	Spartanburg
H. E. Vincent	Hampton
W. E. Walters	Greenville
G. S. Ward	Georgetown
T. A. Waters	Georgia
R. E. Watkins	Anderson
T. G. Watkins	Anderson
F. N. Watson	Anderson
T. H. Watson	Darlington
W. W. Welch	Colleton
E. R. Wheler	Darlington
H. C. Wilburn	Union
M. C. Willis, Jr.	York
A. Yates	Charleston

Special Students

W. J. Blake (B. S., Davidson College)	Abbeville
W. D. Garrison, Jr. (B. S., Clemson College)	Anderson
D. H. Sadler (B. S., Clemson College)	York
W. C. Summer (A. B., Newberry College)	Newberry
J. H. Wyse (B. S., Clemson College)	Richland

Irregular Students

NAME	COUNTY
P. H. Adams	Greenwood
A. H. Agnew	Greenville
E. P. Alford	Florence
F. Auld ..	Greenwood
W. J. Austin...	Anderson
W. S. Baskin	Abbeville
J. C. Beard...	Anderson
R. H. Breese	North Carolina
J. Calhoun Brunson...	Florence
H. V. Bryan	Barnwell
A. F. Byars	Marion
J. R. Cothran	Greenwood
St. J. Dendy	Oconee
L. C. Dickson	North Carolina
W. F. DuPre.....	Oconee
A. M. Edwards	Georgia
A. B. Ehrhardt	Bamberg
A. L. Ervin	Florence
C. W. Fant.....	Newberry
R. A. Gandy	Darlington
R. F. Gooding	Fairfield
B. J. Hammet, Jr.....	Barnwell
J. W. von Hasseln.....	Anderson
E. T. Heyward	Charleston
E. S. Hitch	Georgia
J. M. Jenkins	Charleston
A. S. Jennings.....	Orangeburg
V. V. Kendrick	Cherokee
J. R. London, Jr.....	York
J. Lucas	Spartanburg
J. McCrady ..	Charleston
F. H. McKinney	Greenville
W. A. McKinney.....	Greenville

NAME	COUNTY
J. H. McLeskey	Anderson
J. M. Mars	Greenwood
R. R. Martin	Anderson
W. M. Mayes	Newberry
J. J. Nesbit	Spartanburg
E. A. Prince	Anderson
M. S. Reeves	Charleston
R. L. Riggs	Charleston
J. H. Rodger, Jr.	Union
J. K. Simpson	Laurens
C. V. Sitton.	Anderson
B. L. Swygert	Lexington
J. A. Tyler.....	Aiken
B. H. Weathers	Dorchester
J. F. Welborn	Pickens
J. H. Whitmire	Greenville
J. H. Williams	Greenville
J. L. Woodroof	Georgia

Dorchester..	5
Edgefield	11
Fairfield..	13
Florence..	8
Georgetown	9
Greenville....	16
Greenwood...	29
Hampton..	4
Horry..	5
Kershaw..	8
Lancaster	3
Laurens..	21
Lee..	3
Lexington..	15
Marion....	11
Marlboro..	5
Newberry....	12
Oconee..	15
Orangeburg..	35
Pickens..	12
Richland..	18
Saluda..	4
Spartanburg..	21
Sumter....	12
Union..	5
Williamsburg..	7
York..	17

Total, South Carolina..... 584

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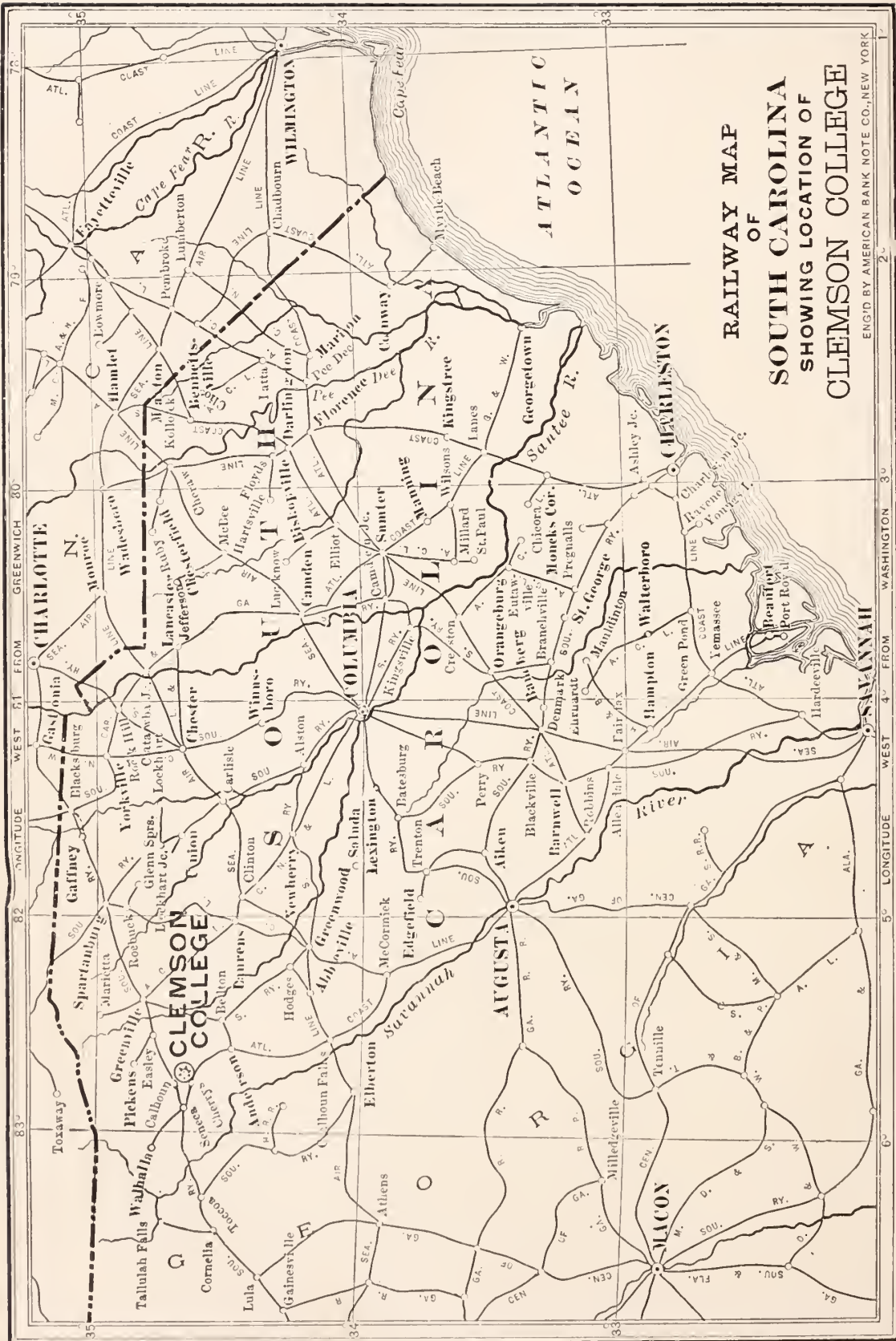
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**RAILWAY MAP
OF
SOUTH CAROLINA
SHOWING LOCATION OF
CLEMSON COLLEGE**

ENG'D BY AMERICAN BANK NOTE CO., NEW YORK

CATALOGUE
OF THE
CLEMSON
AGRICULTURAL COLLEGE
OF SOUTH CAROLINA

STATE AGRICULTURAL AND MECHANICAL COLLEGE

POST-OFFICE: CLEMSON COLLEGE
TELEGRAPH, EXPRESS AND FREIGHT OFFICES: CALHOUN

1904-1905

TWELFTH YEAR

ANNOUNCEMENTS 1905-1906

Columbia, S. C.
THE R. L. BRYAN COMPANY
1905

1905

JULY								SEPTEMBER								NOVEMBER							
S	M	T	W	T	F	S		S	M	T	W	T	F	S		S	M	T	W	T	F	S	
						1							1	2					1	2	3	4	
2	3	4	5	6	7	8		3	4	5	6	7	8	9		5	6	7	8	9	10	11	
9	10	11	12	13	14	15		10	11	12	13	14	15	16		12	13	14	15	16	17	18	
16	17	18	19	20	21	22		17	18	19	20	21	22	23		19	20	21	22	23	24	25	
23	24	25	26	27	28	29		24	25	26	27	28	29	30		26	27	28	29	30			
30	31																						

AUGUST								OCTOBER								DECEMBER							
S	M	T	W	T	F	S		S	M	T	W	T	F	S		S	M	T	W	T	F	S	
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6	7	8	9	10	11	12		8	9	10	11	12	13	14		3	4	5	6	7	8	9	
13	14	15	16	17	18	19		15	16	17	18	19	20	21		10	11	12	13	14	15	16	
20	21	22	23	24	25	26		22	23	24	25	26	27	28		17	18	19	20	21	22	23	
27	28	29	30	31				29	30	31						24	25	26	27	28	29	30	
																31							

1906

JANUARY							MARCH							MAY						
---	1	2	3	4	5	6	---	---	---	---	1	2	3	---	---	1	2	3	4	5
7	8	9	10	11	12	13	4	5	6	7	8	9	10	6	7	8	9	10	11	12
14	15	16	17	18	19	20	11	12	13	14	15	16	17	13	14	15	16	17	18	19
21	22	23	24	25	26	27	18	19	20	21	22	23	24	20	21	22	23	24	25	26
28	29	30	31	---	---	---	25	26	27	28	29	30	31	27	28	29	30	31	---	---
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FEBRUARY							APRIL							JUNE						
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4	5	6	7	8	9	10	8	9	10	11	12	13	14	3	4	5	6	7	8	9
11	12	13	14	15	16	17	15	16	17	18	19	20	21	10	11	12	13	14	15	16
18	19	20	21	22	23	24	22	23	24	25	26	27	28	17	18	19	20	21	22	23
25	26	27	28	---	---	---	29	30	---	---	---	---	---	24	25	26	27	28	29	30
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College Calendar

Session 1905—1906

1905

- Aug. 8-10. State Farmers' Institute, at the College
Sept. 7-12. Examinations for admission and for removal of conditions
Sept. 13. Opening of the 13th session; exercises begin at 8.40 A. M.
Nov. 30. Thanksgiving day: a holiday
Dec. 23. First day of Christmas recess

1906

- Jan. 3. Beginning of the second term, 8.40 A. M.
Jan. 19. Lee's birthday: annual public exercises of the Columbian literary society in the evening
Feb. 22. Washington's birthday: a holiday.
Annual public exercises of the Palmetto literary society in the evening
Feb. 27. Stated meeting of the Board of Trustees
Mar. 18. Calhoun's birthday: annual public exercises of the Calhoun literary society in the evening

1906

- Mar. 19. Beginning of the third term, 8.40 A. M.
May 1. A holiday: annual track and field athletic contests
June 3. Beginning of commencement exercises; baccalaureate sermon
June 4. Address of alumni orator
Contest of literary society representatives
Military exercises and graduation parade
Stated meeting of the Board of Trustees
June 5. Commencement day; address to the graduating class
Graduating exercises; delivery of diplomas

Reports to Parents

Reports of class-standing and discipline will be sent to parents for periods ending on the following dates:

Oct. 13, Nov. 10, and Dec. 14,* 1905; Feb 2, Mar. 9,* Apr. 20, and May 25,* 1906. Dates marked with an asterisk (*) are approximate, depending upon the beginning of the respective term examinations.

Quarterly Dues

Payable Sept. 13, Nov. 15, 1905; Jan. 29, Apr. 3, 1906.

Board of Trustees

Life Members

HON. R. W. SIMPSON, President.....	Pendleton, Anderson Co.
SENATOR B. R. TILLMAN.....	Trenton, Edgefield Co.
HON. R. E. BOWEN.....	Briggs, Pickens Co.
HON. J. E. BRADLEY.....	Troy, Abbeville Co.
HON. M. L. DONALDSON.....	Greenville, Greenville Co.
HON. J. E. WANNAMAKER.....	St. Matthews, Orangeburg Co.
HON. ALAN JOHNSTONE.....	Newberry, Newberry Co.

Term Expires 1906

HON. W. D. EVANS.....	Cheraw, Marlboro Co.
HON. A. T. SMYTHE.....	Charleston, Charleston Co.
HON. L. A. SEASE.....	Prosperity, Newberry Co.

Term Expires 1908

HON. J. E. TINDAL.....	Felder, Clarendon Co.
HON. JESSE H. HARDIN.....	Chester, Chester Co.
HON. G. DUNCAN BELLINGER.....	Columbia, Richland Co.

NOTE.—Hon. Alan Johnstone was elected a life member of the Board of Trustees, on March 1st, 1905, to fill the vacancy caused by the death of Hon. D. K. Norris, January 23d, 1905.

Standing Committees of the Board

Executive Committee

Messrs. Donaldson, Tindal, Bowen, Bradley

Finance Committee

Messrs. Simpson, Smythe, Donaldson

Committee on Fertilizer Control

Messrs. Tindal, Wannamaker, Evans, Bellinger

Experiment Station Committee

Messrs. Tindal, Tillman, Wannamaker, Donaldson, Smythe

Farmers' Institute Committee

Messrs. Sease, Donaldson, Evans, Tillman

Entomological Inspection Committee

Messrs. Donaldson, Sease, Wannamaker

Veterinary Inspection Committee

Messrs. Evans, Bowen

Committee on Coast Experiments

Messrs. Smythe, Wannamaker

Board of Visitors for the Session 1905—1906

FIRST DISTRICT—Hon. Huger Sinkler, Charleston

SECOND DISTRICT—Hon. G. L. Toole, Aiken

THIRD DISTRICT—Hon. Chas. H. Carpenter, Pickens

FOURTH DISTRICT—Hon. Thos. P. Cothran, Greenville

FIFTH DISTRICT—Hon. J. G. Richards, Jr., Liberty Hill

SIXTH DISTRICT—Hon. R. P. Hamer, Jr., Hamer

SEVENTH DISTRICT—Hon. Altamont Moses, Sumter

Faculty*

PATRICK HUES MELL, Ph. D., LL. D.
President

Agricultural Department

JAMES STANLEY NEWMAN**
Director of Department
Professor of Agriculture

FRED HARVEY HALL CALHOUN, Ph. D.
Professor of Geology and Mineralogy

CHARLES CARTER NEWMAN
Associate Professor of Horticulture

CHARLES EDWARD CHAMBLISS, B. S., M. S.
Associate Professor of Zoology and Entomology

HAVEN METCALF, A. M., Ph. D.
Associate Professor of Botany and Bacteriology

LOUIS AMOS KLEIN, V. M. D.
Associate Professor of Veterinary Science

HARMON BENTON, B. S., M. S.**
Assistant Professor of Agriculture

JOHN MICHELS, M. S.
Associate Professor of Animal Husbandry and Dairying

BERNARD HAZELIUS RAWL, B. S.†
Instructor in Animal Husbandry and Dairying

GEORGE A. HANVEY, JR., B. S., D. V. S.
Assistant in Veterinary Science

JUNIUS M. BURGESS, B. S.§
Instructor in Animal Husbandry and Dairying

*The names of the Faculty, after that of the President, are arranged in groups in each department: Professors, Associate Professors, Assistant Professors, and Instructors, in the order of their respective appointments.

**Resigned, to take effect July 1st, 1905.

†Resigned, to take effect April 1st, 1905.

§In place of Mr. Rawl, resigned.

Mechanical and Electrical Department

WALTER MERRITT RIGGS, E. M. E.

Director of Department

Professor of Mechanical and Electrical Engineering

SAMUEL BROADUS EARLE, A. M., M. E.

Associate Professor of Mechanical Engineering.

THOMAS GRAYSON POATS

Associate Professor of Physics

RUDOLPH EDWARD LEE, B. S.

Associate Professor of Drawing

HENRY HEARST KYSER, E. M. E.*

Assistant Professor of Electricity

CALVIN SHELOR WRIGHT, B. S. M. E.

Assistant Professor of Machine-work

JOHN HILLIARD HOOK, B. S.

Assistant Professor of Wood-work

WILLISTON WIGHTMAN KLUGH, B. S.

Assistant Professor of Drawing

CLIFFORD BURNHAM GRISWOLD, B. S.

Assistant Professor of Forge and Foundry

FRANK TOWNES DARGAN, M. S.**

Assistant Professor of Electricity

JOHN WEEMS GANTT

Instructor in Drawing

STYLES TRENTON HOWARD, B. M. E.

Assistant in Wood-work

*Absent on leave during the session of 1904-1905.

**In the place of Professor Kyser for the session of 1904-1905.

Department of Chemistry

MARK BERNARD HARDIN

Director of Department

Professor of Chemistry

RICHARD NEWMAN BRACKETT, A. B., Ph. D.

Associate Professor of Chemistry

FRANK SCOTT SHIVER, Ph. G.

Assistant Professor of Agricultural Analysis

DAVID HILL HENRY, B. S.

Instructor in Chemistry

Department of Textile Industry

J. H. MEANS BEATY

Director of Department

Professor of Textile Industry

FREDERIC DANIEL FRISSELL

Associate Professor of Weaving and Designing

JOSEPH HIDY JAMES, Ph. D.

Assistant Professor of Textile Chemistry and Dyeing

BARTHOLOMEW MOORE PARKER, B. S.

Instructor in Textile Industry

Academic Department

CHARLES MANNING FURMAN, A. B.

Professor of English

WILLIAM SHANNON MORRISON, A. B.

Professor of History and Political Economy

PAUL THOMAS BRODIE, B. S., A. B.

Professor of Mathematics and Civil Engineering

JOHN SHERWOOD McLUCAS, A. M.

Assistant Professor of English

CLEMSON COLLEGE

DAVID WISTAR DANIEL, M. A.

Assistant Professor of English

SAMUEL MANER MARTIN, B. S.

Assistant Professor of Mathematics

SAMUEL WATSON REAVES, B. S., A. B.

Assistant Professor of Mathematics

AUGUSTUS SHANKLIN, B. S.

Registrar and Secretary of the Faculty

Assistant Professor of Mathematics

THOMAS WADLINGTON KEITT

Assistant Professor of English

ARTHUR BUIST BRYAN, B. S., B. Litt.

Assistant Professor of English

HALE HOUSTON, C. E.

Assistant Professor of Applied Mathematics in Civil Engineering

Military Department

CHARLES DONALD CLAY

Captain U. S. Army, Retired, Commandant of Cadets

Professor of Military Science and Tactics

Preparatory Department

MARK EDWARD BRADLEY, A. B.

Instructor in English, History, and Geography

JOSEPH EVERETTE HUNTER, B. S.

Instructor in Mathematics

The following members of the Collegiate Faculty also instruct the Preparatory Class in the subjects indicated:

PROFESSOR MORRISON, History

PROFESSOR CALHOUN, Geography

ASSISTANT PROFESSOR KEITT, English

ASSISTANT PROFESSOR BRYAN, English

Standing Committees of the Faculty

The President is *ex officio* a member of each committee.
The first named in each instance is chairman.

Discipline Committee

President Mell, Professors Hardin, Furman, Morrison, Newman,
Beaty, Brodie, Riggs, Calhoun, Clay

Committee on Examinations

Professors Brodie, Furman, Morrison, Riggs, Calhoun

Schedule Committee

Professors Morrison, Brackett, Furman, Riggs, Lee, Reaves,
James, Benton

Library Committee

Professors McLucas, Chambliss, Bryan, Beaty, Metcalf, Calhoun

Committee on Preparatory Department

Professors Furman, Morrison, Brodie, Calhoun

Committee on Irregular Students

Professors Chambliss, Lee, Benton, Reaves, Wright

Committee on Chapel Services

Professors Poats, Shiver, Lee, Keitt, Frissell

Committee on Chapel Music

Professors Riggs, Hook, Bryan, Mr. Rawl

Committee on Lectures and Entertainments

Professors Daniel, Martin, Klugh, Houston, Dargan

Committee on Extension Work

Professors Metcalf, Benton, Chambliss, James, Daniel

Committee on Alumni

Professors Shanklin, Lee, Mr. Henry

Committee on Athletics

Professors Riggs, McLucas, Daniel, Shanklin, Calhoun, Mr. Gantt

Catalogue Committee

Professors Earle, Brackett, James, Houston, Clay, Klein

Museum Committee

Professors Calhoun, Metcalf, Chambliss

Officers of the College

PATRICK HUES MELL, Ph. D., LL. D.

President

* CHARLES DONALD CLAY, Capt. U. S. Army, Retired

Commandant

✓ ALEXANDER MAY REDFERN, B. S., M. D.

Surgeon

✓ AUGUSTUS SHANKLIN

Registrar and Secretary of Faculty

• • PAUL HAMILTON EARLE SLOAN, M. D.

Treasurer and Secretary Board of Trustees

HUGH MILTON STACKHOUSE

Secretary Board of Fertilizer Control

✓ GEORGE EDWIN TAYLOR

Bookkeeper

MISS SUSAN HALL SLOAN

Librarian

MISS MINNIE BATES WANNAMAKER

Secretary to the President

MISS VIRGINIA NORRIS*

Stenographer to Agricultural Department

MISS HELEN BRADFORD**

Stenographer to Agricultural Department

JOHN NATHAN HOOK

Justice Clemson College Corporation

JAMES PERCIVAL LEWIS

Superintendent of College Farm

AUGUST SCHILLETTER

Steward

WILLIAM CALVIN TUCKER

Assistant to Commandant

BEN CURTIS HARD

Assistant Bookkeeper

Board of Health

President MELL, Doctors REDFERN and SLOAN, Professors
HARDIN and NEWMAN

*Absent on leave.

**In place of Miss Norris.

Regimental Organization

MARCH 13TH, 1905

Commandant Cadets

CAPT. CHARLES DONALD CLAY

U. S. ARMY, RETIRED

Regimental Staff

E. R. McIver¹.....*Captain and Adjutant*
J. W. Ruff².....*Captain and Quartermaster*

Non-Commissioned Staff

I. W. Bull.....*Sergeant Major*
O. L. Derrick.....*Quartermaster Sergeant*
J. E. Johnson.....*Color Sergeant*

Signal Corps

C. C. Schirmer¹.....*Lieutenant*
H. K. Sullivan.....*First Sergeant*

First Battalion

ACTING MAJOR H. W. RARRE²

Adjutant

W. S. Beaty

Sergeant Major

C. P. Abell

COMPANY "A"

COMPANY "B"

COMPANY "C"

COMPANY "D"

Captains

H. W. Barre²

L. E. Boykin⁴

A. J. Speer³

C. J. Lemmon⁵

Lieutenants

F. W. Lachicotte

R. L. Link

F. M. Routh

R. P. Evans

C. P. Josey

B. F. Lee

M. B. Sams

J. G. Parks

First Sergeants

T. F. Barton

M. A. Savage

W. A. Keenan

J. A. Killian

Sergeants

T. E. Stokes	W. R. Smith	S. P. Harper	J. M. Moss
H. W. Schumpert	C. A. Grainger	C. Coles	A. P. DuBose
J. J. Rauch	L. G. Southard	R. O. Rhinehardt	A. M. Whiteside
S. W. Cannon	J. H. McClain	H. S. Jenkins	S. L. Webb
J. H. Barksdale	J. H. Reid	E. T. Heyward	E. P. Crouch

Corporals

S. R. Perrin	C. E. Jones	L. S. Horton	W. P. Sloant
L. W. Perrin	F. M. Furtick	A. B. Taylor	F. C. Bryant
D. S. Hollis	P. W. Spencer	R. E. Dalton	W. W. Webb
E. A. Crawford	J. C. Clarke	E. H. Kinsler	H. P. Lykes
W. A. Latimer	B. D. Carter	E. M. Kaminer	E. B. Plenge
J. W. McLendon	R. R. Tolbert	F. A. Conner	J. W. Hicklin
A. M. Klugh		P. Quattlebaum	G. D. Sanders
L. E. Dew		R. A. Reid	W. S. Stone

Second BattallionACTING MAJOR B. O. KENNEDY ¹*Adjutant*J. C. Goggans²*Sergeant Major*

W. A. Sanders

COMPANY "E"

COMPANY "F"

COMPANY "G"

COMPANY "H"

Captains

F. E. Cope ³	C. P. Ballinger ⁶	B. O. Kennedy ¹	J. M. Jenkins ⁷
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Lieutenants.

E. E. Porter	T. K. Elliott	J. C. Richardson	E. B. Dibble
M. L. Murph	S. Sorentruc	J. R. Siau	C. E. Lathrop

First Sergeants

S. L. Johnson	A. G. Ellison	W. P. White	C. W. Mack
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Sergeants

J. L. Woodruff	J. C. Boesch	F. M. Dwight	J. A. Gelzer
A. R. McAiley	J. C. Summers	F. E. Thomas	T. B. Jacobs
W. J. Latimer	T. L. Goodwin	J. V. Phillips	W. C. Moore
D. F. Cherry	T. R. Ellison	J. N. Wright	W. Beckett
A. L. Brunson	D. H. Hill	C. K. Pollitzer	F. B. McLaurin

Corporals

M. H. Banks	W. O. Scott	F. M. Stephenson	J. B. Duckett
J. W. Keel	E. V. Garrett	G. D. Curtis	J. B. Bailey
J. F. Ehrhardt	C. T. Pottinger	A. S. Heyward	A. V. Bethca
W. W. Wannamaker	H. P. Moses	H. C. Crum	J. M. Bryan
H. Stevens	C. W. Busch	S. L. Lebby	J. M. Miller
D. M. Fraser	E. D. McCutchan	A. L. Campbell	S. M. Pennel
H. W. Moore	R. A. Easterling	G. R. Jones	A. V. Hooks
			J. J. Brown

Cadet Band

B. H. RAWL, *Director*

L. P. Slattery, *Chief Musician and Lieutenant*

L. R. Hoyt, *Drum Major*

A. A. Merrick, *Sergeant*

L. P. Slattery, *Solo B flat Cornet*

J. E. Traxler, *1st B flat Cornet*

J. P. Lewis, *1st B flat Cornet*

B. Boggs, *2d B flat Cornet*

J. J. Beshere, *3d B flat Cornet*

K. M. James, *Solo B flat Clarinet*

D. L. Bissell, *1st B flat Clarinet*

T. L. Bissell, *Solo E flat Clarinet*

W. R. Smith, *Piccolo*

A. A. Merrick, *Baritone*

H. E. Crawford, *1st Slide Trombone*

R. T. Graham, *2d Slide Trombone*

J. G. Holland, *Bass*

T. N. Bristow, *Bass*

W. L. Schachte, *1st Tenor*

W. K. Tavel, *2d Tenor*

F. C. Poag, *Solo Alto*

J. B. Heyward, *2d Alto*

L. Boggs, *3d Alto*

H. P. Sitton, *Bass Drum*

W. H. Wylie, *Snare Drum*

W. E. Walters, *Cymbals*

Experiment Station Staff

P. H. MELL, Ph. D., LL. D., *President of College, Director*

J. S. NEWMAN, *Vice-Director and Agriculturist*

M. B. HARDIN, *Chief Chemist*

C. C. NEWMAN, *Horticulturist*

C. E. CHAMBLISS, M. Sc., *Entomologist*

HAVEN METCALF, A. M., Ph. D., *Botanist and Bacteriologist*

L. A. KLEIN, V. M. D., *Veterinarian*

JOHN MICHELS, M. S., *Animal Husbandry and Dairying*

R. N. BRACKETT, Ph. D., *Assistant Chemist*

F. S. SHIVER, Ph. G., *Assistant Chemist*

C. C. McDONNELL, B. S., *Assistant Chemist*

B. F. ROBERTSON, B. S., *Assistant Chemist*

D. H. HENRY, B. S., *Assistant Chemist*

H. BENTON, M. S., *Assistant Agriculturist*

F. C. ATKINSON, M. S., *Assistant Chemist*

W. E. DICKINSON, *Assistant Chemist*

J. S. PICKETT, *Foreman*

JUNIUS M. BURGESS, B. S., *Assistant Animal Husbandry and Dairying*

JOHN N. HOOK, *Secretary and Librarian*

State Chemist and Inspection Officers*

PROFESSOR M. B. HARDIN, *State Chemist*

DR. L. A. KLEIN, *State Veterinarian*

PROFESSOR C. E. CHAMBLISS, *State Entomologist*

*Appointed by the Board of Trustees under the State laws requiring them to carry on the work indicated.

Ministers for Session 1904—1905

Sept. 11.	Dr. A. J. Wardlaw.....	Union, S. C.
Sept 18.	Dr. John Kershaw.....	Charleston, S. C.
Sept. 25.	Rev. E. O. Watson.....	Spartanburg, S. C.
Oct. 2.	Dr. Edwin M. Poteat.....	Greenville, S. C.
Oct. 9.	Rev. W. P. Witsell.....	Columbia, S. C.
Oct. 16.	Dr. W. R. Richardson.....	Spartanburg, S. C.
Oct. 23.	Dr. J. A. Clifton.....	Orangeburg, S. C.
Oct. 30.	Rev. A. S. Rogers.....	Rock Hill, S. C.
Nov. 6.	Dr. C. C. Brown.....	Sumter, S. C.
Nov. 13.	Rev. J. C. Jeter.....	Anderson, S. C.
Nov. 20.	Rev. W. L. Lingle.....	Rock Hill, S. C.
Nov. 27.	Rev. M. B. Kelley.....	Anderson, S. C.
Dec. 4.	Dr. B. D. Gray.....	Atlanta, Ga.
Dec. 11.	Rev. K. G. Finlay.....	Clemson College, S. C.
Dec. 18.	Dr. J. S. Watkins.....	Spartanburg, S. C.
Jan. 8.	Rev. K. G. Finlay.....	Clemson College, S. C.
Dec. 18.	Dr. J. S. Watkins.....	Spartanburg, S. C.
Jan. 8.	Rev. K. G. Finlay.....	Clemson College, S. C.
Jan. 15.	Dr. S. M. Smith.....	Columbia, S. C.
Jan. 22.	Bishop W. W. Duncan, D. D., LL. D.....	Spartanburg, S. C.
Jan. 29.	Dr. J. A. B. Scherer.....	Newberry, S. C.
Feb. 5.	Dr. J. A. Wynne.....	Gainesville, Ga.
Feb. 12.	Rev. A. R. Mitchell.....	Greenville, S. C.
Feb. 19.	Dr. J. T. Plunkett.....	Augusta, Ga.
Feb. 26.	Rev. R. A. Child.....	Spartanburg, S. C.
Mar. 5.	Dr. H. A. Bagby.....	Greenwood, S. C.
Mar. 12.	Rev. H. H. Covington.....	Sumter, S. C.
Mar. 19.	Rev. S. J. Cartledge.....	Anderson, S. C.
Mar. 26.	Rev. John W. Speake.....	Charleston, S. C.
Apr. 2.	Dr. A. J. S. Thomas.....	Greenville, S. C.
Apr. 9.	Rev. H. O. Judd.....	Columbia, S. C.
Apr. 16.	Rev. H. W. Pratt.....	Washington, D. C.
Apr. 23.	Rev. S. W. Henry.....	Pendleton, S. C.
Apr. 30.	Rev. J. P. Miller.....	Orangeburg, S. C.
May 7.	Rev. O. J. Copeland.....	Waynesboro, Ga.
May 14.	Rev. C. B. Wilmer.....	Atlanta, Ga.
May 21.	Dr. Chas. B. Hyde.....	Chester, S. C.
May 28.	Rev. John W. Heidt.....	Atlanta, Ga.
June 4.	Baccalaureate sermon, Rev. J. A. B. Scherer, Ph. D.....	Newberry, S. C.

Alumni Organizations

Clemson College Alumni Association

M. E. ZEIGLER, '02, President, Washington, D. C.
J. N. WALKER, '00, First Vice-President, Appleton, S. C.
T. S. PERRIN, '03, Second Vice-President, Atlanta, Ga.
J. R. CONNOR, '04, Third Vice-President, Eutawville, S. C.
D. H. HENRY, '98, Cor. Sec., Clemson College, S. C.
A. B. BRYAN, '98, Rec. Sec., Clemson College, S. C.
R. E. LEE, '96, Treasurer, Clemson College, S. C.
W. G. HILL, '01, Orator for 1905; M. E. ZEIGLER, Alternate.

The New York Clemson Club, New York City

J. T. BOWEN, '96, President
W. J. SARRATT, '98, Vice-President
EDGAR M. MATTHEWS, '01, Secretary

The Washington Chapter of the Clemson College Alumni Association, Washington, D. C.

E. T. HUGHES, '01, President
M. E. ZEIGLER, '02, Vice-President
T. B. YOUNG, '03, Secretary
G. H. SWYGERT, '98, Treasurer

The Clemson Club of Charleston, S. C.

C. M. FURMAN, JR., '96, President
W. E. GREGG BLACK, '03, Vice-President
W. D. GARRISON, '03, Secretary
E. BROCKMANN, '02, Treasurer

LOCATION AND HISTORICAL SKETCH
ADMISSION AND COURSES OF STUDY

Location

The College is located on the old Fort Hill homestead of John C. Calhoun, on the dividing line between Oconee and Pickens Counties, in the picturesque foot-hills of the Blue Ridge. It has an elevation of 900 feet above sea level, and commands an excellent view of the mountains to the north and west, some of which attain an altitude of nearly 5,000 feet. The climate is invigorating and healthful, and the surroundings are in every way favorable to the highest physical and mental development.

The College is one mile from Calhoun, a station on the main line of the Southern Railway, and two miles from Cherrys, on the Blue Ridge Railroad. By means of these roads and their connections, the College is easily accessible from all parts of the State. It is also connected by local telephone with neighboring towns in adjoining counties, and by telegraph and long distance telephone with all parts of the country. The post office is conveniently situated on the campus, and receives five daily mails.

Historical Sketch

The College is the outcome of a movement for the establishment of an Agricultural College by a convention of farmers of the State in 1886. The first step toward the realization of this project was taken by the Hon. Thomas G. Clemson, who, upon his death in 1888, bequeathed to the State the old Fort Hill homestead, the former home of John C. Calhoun, and other securities to the value of \$58,539, "for the establishment of an Agricultural College." The estate included about 800 acres of land and the historic old Calhoun residence, which is now carefully preserved on the College cam-

pus. This bequest was accepted by the State Legislature in an Act which became a law in November, 1889.

The College was opened on the 6th day of July, 1893, and 446 students were enrolled during the first session. These were classified as sophomores, freshmen, and higher and lower preparatory. The Trustees having decided that sessions should begin on the third Thursday in February and end on the third Thursday in December, the first session was only about five and a half months long. On this account the students were continued in the same classes throughout the second session, February to December, 1894, and the enrollment increased to 635. On the night of May 22d, 1894, the Main building was burned, but the regular exercises were not interrupted, and the only summer vacation consisted of a week's encampment at Spartanburg in July.

During the third session, February to December, 1895, there were 370 students in attendance, with the former sophomores advanced to the junior class. There was a recess of two weeks in the latter part of July, and the session was closed on December 7th. The enrollment during the fourth session, February to December, 1896, was 350, and the first commencement exercises were held on December 13th to 16th, 1896, with a graduating class of 37, 29 in the agricultural course and 8 in the mechanical-electrical. The fifth session opened in the regular way, on the third Thursday in February, 1897. At a meeting of the Trustees in July, it was decided to open the College on the 14th of September, and that henceforth the sessions should begin regularly on the second Wednesday in September and close on the second Wednesday in June. The exercises of the second commencement, which would normally have occurred in December, 1897, were held on February 6th to 9th, 1898. The graduating class numbered 25, 13 in the agricultural course and 12



THE CALHOUN MANSION

in the mechanical-electrical. The undergraduate classes were continued until June, and the total enrollment for this long session (February, 1897, to June, 1898), was 449. It will be observed that, owing to the change from winter to summer vacation, there was no class graduated in 1897.

Since 1898 the annual commencement exercises have been held regularly in June, although the closing day was afterward changed to first Tuesday, instead of second Wednesday. During the sixth session, 1898-1899, the enrollment was 446, and the graduating class numbered 16, 6 in the agricultural course, 6 in the mechanical-electrical, and 4 in the civil engineering. The textile department was first opened for students at the beginning of this session, in September, 1898. During the seventh session, 1899-1900, 461 students matriculated, and the class of 1900 numbered 28, including 12 in the agricultural course, 6 in the mechanical-electrical, 6 in the civil engineering, and 4 in the textile.

Beginning with the eighth session, 1900-1901, preparatory instruction was restricted to a one-year course, thus abolishing the lower preparatory class. During the session 483 students were enrolled, and the graduating class numbered 31, including 9 in the agricultural course, 11 in the mechanical-electrical, 2 in the civil engineering, and 9 in the textile. In the ninth session, 1901-1902, 500 students matriculated and 59 were graduated, including 12 in the agricultural course, 28 in the mechanical-electrical, 2 in the civil engineering, and 17 in the textile. The enrollment during the tenth session, 1902-1903, was 539, and the graduating class numbered 60, including 6 in the agricultural course, 28 in the mechanical-electrical, 5 in the civil engineering, and 21 in the textile.

In the eleventh session, 1903-1904, 605 students were enrolled, and the graduating class numbered 39, including 4 in

the agricultural course, 28 in the mechanical-electrical, 2 in the civil engineering, and 5 in the textile.

The total number of graduates of June, 1904, was 295.

A gold medal was awarded to the mechanical, electrical, civil and textile exhibit at the St. Louis Exposition.

A bronze medal was awarded to the agricultural department for the preservation of the sweet potato.

Admission of Students

Every candidate for admission must be at least sixteen years of age.

Students desiring to enter the College should apply to the President for application blanks, and these, properly filled out, should be returned to the President as early in the summer as possible, and in no case later than August 15th.

Certificates of good moral character are required of all candidates not known to members of the Faculty; and if the candidates come from another college, this certificate must show that he was honorably discharged.

In selecting students who shall be admitted to the College, subject to their passing the required examinations, the following rules, prescribed by the Board of Trustees, will govern:

1. Students must undergo a medical examination, and no student will be admitted who is not healthy and free from contagious diseases, including consumption.

2. Students will be apportioned among counties in proportion to representation in the House of Representatives, under the following rules and regulations:

- (a). Applicants prepared to enter College classes will have preference over those who enter only the preparatory class.

- (b). As between applicants of equal preparation, the oldest will have the preference.

- (c). Other things being equal, the first applicants will receive permission to enter.

(d). When a county has not sent its quota, the places thus left shall be apportioned among the other applicants.

(e). Applicants not entering within ten days after the opening of the session will have their rights in the place given to applicants next on the roll.

Students upon arrival at the College at the opening of the session must report at once to the President's office and matriculate before they will be assigned to quarters in the barracks. No student will be admitted to any of the classes or examinations of the College before matriculation and payment of the fees. (See pages 50-52).

Matriculation is equivalent to a pledge to conform to the rules and regulations of the College.

Entrance Requirements

For admission into the freshmen class a thorough knowledge is required of arithmetic, elementary algebra, English grammar, geography, and history of the United States.

Arithmetic.—The applicant is expected to have a thorough practical acquaintance with the ordinary principles and operations of arithmetic. Wentworth's Practical Arithmetic is recommended as a suitable text-book.

Algebra.—The detailed requirements are as follows: Definitions and notation, fundamental operations, including laws of signs, and the interpretation of negative results; use of parentheses; factoring; highest common factor; lowest common multiple; simple and complex fractions; simple integral and fractional equations with one unknown number, and problems leading to such equations; simultaneous equations of the first degree, with applications to solution of problems; involution of monomials and polynomials; evolution of monomials and polynomials; theory of exponents with applications; radicals, including solution of equations involving

rationalization; simple operations with imaginary expressions; pure and affected quadratic equations containing one unknown number, with application to problems.

The student should cover carefully the whole ground here specified, and should acquire a clear understanding not only of algebraic processes but of the principles and reasons involved in every operation. Students fail on entrance examinations more frequently because of imperfect knowledge of the subject matter passed over, than because they have not gone far enough in the text-book.

A satisfactory treatment of the topics in Algebra may be found in Wentworth's New School Algebra (used in the public schools).

English.—Applicants are examined in spelling, sentence analysis, and oral reading; and are required to write short essays on an assigned subject.

Geography.—Applicants must possess a fair knowledge of general geography, such as may be obtained from a proper study of Frye's Advanced, Maury's Manual, Tarr and McMurry's Complete Geography, or other standard text-book of equal grade. The following topics will be especially emphasized in the entrance examinations: Outlines and positions of the continents, and locations of the principal mountains, plateaus, river basins, and coastal lowlands; influences of land forms and climate upon the life and industries of the inhabitants; locations and outlines of important countries, particularly those of America and Europe, and of the States in the United States; locations of great cities in all countries, and conditions favorable to the growth of cities.

History.—A School History of the United States, by White, is the text-book recommended. Any other school history may be used in place of the one named.

Entrance Examinations

Entrance examinations are held during the five days immediately preceding the opening of the session, September 7th to 12th, 1905, and all applicants for admission are expected to report promptly at the beginning of this period. Former students, also, who have conditions to remove or work to make up, are required to report at the same time.

There is no extra charge for board during this period.

Examinations on the subjects required for entrance will be held on the dates shown in the following schedules, beginning at 9. A. M.:

For Admission to the Freshman Class.

Arithmetic, Thursday, September 7th, 1905.

Algebra, Friday, September 8th, 1905.

English, Saturday, September 9th, 1905.

Geography, Monday, September 11th, 1905.

History, Tuesday, September 12th, 1905.

For Admission to the Preparatory Class

Arithmetic, Saturday, September 9th, 1905.

English, Monday, September 11th, 1905.

Geography, Tuesday, September 12th, 1905.

Upon passing satisfactorily the required examinations, the Committee on Examinations furnishes the applicant with a certificate to that effect, and upon presentation of this certificate at the President's office he is assigned to the class recommended by the Committee.

For admission to advanced standing, applicants must be prepared to stand examinations on the subjects passed over by the lower classes, as indicated in the courses of study scheduled on the following pages. Such applicants should report with other new students during the regular examina-

tion period, and arrange with their instructors for the necessary examinations before the opening of the session. Students admitted to advanced standing are allowed a reasonable length of time in which to make up shop work of the lower classes, in case they have not done equivalent work elsewhere.

Examinations for admission to the beneficiary scholarships established at the recent session of the legislature are held by the various county boards of education, and cannot be given at the College. For further particulars in regard to these scholarships, see page 52.

Prescribed Courses of Study

As briefly described and tabulated on the following pages, six regular four-year courses are offered, each leading to graduation with the degree of Bachelor of Science (B. S.), the course pursued being designated on the diploma.

The two agricultural courses are alike in the freshman year, and agricultural students are, therefore, required to choose between these at the beginning of the sophomore year. The other four courses are alike during the first two years, and choice between them is made at the beginning of the junior year. The descriptions accompanying the detailed schedules of studies in the various courses are intended to aid the student in arriving at an adequate estimate of the scope and purposes of each course, in order that he may the more intelligently choose between them.

In all the courses, two hours of practical work in shop, laboratory, or field, are regarded as equivalent to one hour of "theoretical" work, or recitations, as no outside preparation is required for practical work, and the exercises are completed in the periods assigned in the curriculum.

Change from one course to another is not permitted except upon approval of the Faculty. Any student desiring to change his course of study must submit a written application to the President for such change within thirty days from the date of his matriculation for the current session. This application must be accompanied by the written permission of parent or guardian, unless the student is twenty-one years of age.

COURSE I.—AGRICULTURE

This is a broad educational course, covering the whole field of natural sciences that are tributary to the agricultural industry, together with a liberal amount of mathematics, English, physics, history and political economy, and a maximum amount of chemistry.

The division of the original course into (1) Agriculture and Horticulture, and (2) Agriculture and Animal Industry, described on the following page, has been made in order to afford opportunity for election in these lines. In this course the student is given more special training in agriculture, horticulture, chemistry, botany, bacteriology, and entomology; and thus is laid a foundation upon which he may readily specialize in any of these branches after graduation. The student is well equipped to take up farming, gardening, or fruit growing as an occupation, or for the pursuit of investigational work in the United States Department of Agriculture or the various state experiment stations.

Either of the agricultural courses forms an excellent foundation for the study of other professions, particularly that of medicine.

COURSE I.—AGRICULTURE

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Shop work (240, 261).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (231).....	3	3	3
History (511, 512).....	3	3	3	Rural Architecture (233).....	3	3	3
Agriculture (100).....	2	2	—	Agriculture (100).....	3	3	3
Live Stock (150).....	—	—	2	Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522).....	5	—	—	Veterinary Science (131).....	—	—	2
English (502).....	3	3	3	Botanical Lab. (171).....	4	2	—
Chemistry (300).....	3	3	3	Chemical Lab. (301).....	3	2	2
Physics (220).....	2	2	2	Surveying Field (530).....	—	2	2
Surveying (530).....	—	2	2	Physiological Lab. (140).....	—	2	2
Physiology (140).....	—	1	1	Agriculture (101).....	3	2	2
Agriculture (101).....	—	2	2	Horticulture (120).....	2	2	2
Horticulture (120).....	2	2	2	Military Drill (602).....	3	3	3

Junior Class

English (503).....	2	2	2	Rural Engineering (534).....	2	—	—
History (513, 514).....	2	2	2	Chemical Laboratory (303)...	4	4	4
Chemistry (302).....	2	2	2	Zoological Lab. (141).....	—	5	—
Rural Engineering (534).....	2	—	—	Botanical Laboratory (171)...	—	—	3
Zoology (141).....	—	2	—	Agriculture (102, 103).....	2	—	2
Botany (171).....	—	—	3	Horticulture (121).....	—	3	3
Agriculture (102, 103).....	2	—	3	Dairying (162).....	4	—	—
Horticulture (121).....	2	2	2	Military Drill (602).....	3	3	3
Dairying (161).....	2	4	—				
Military Science (600).....	1	1	1				

Senior Class

English (504).....	—	2*	3	Chemical Laboratory (305)...	6	6	6
Political Economy (515).....	3	2*	—	Entomological Lab. (142).....	2	2	2
Chemistry (304).....	2	2	2	Forestry (172).....	2	—	—
Geology (112).....	2	4	—	Bacteriological Lab. (173, 174)...	—	2	4
Entomology (142).....	—	2	3	Agriculture (117).....	2	—	—
Forestry (172).....	2	—	—	Horticulture (122).....	—	2	—
Bacteriology (173, 174).....	—	1	4	Military Drill (602).....	3	3	3
Agriculture (104).....	2	3	2				
Stock Feeding (156).....	3	—	—				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE II.—AGRICULTURE AND ANIMAL INDUSTRY

This is a differentiation of the original course in agriculture for the purpose of affording students specially interested in general animal industry, dairying and veterinary medicine an opportunity to receive more instruction in these lines than was formerly practicable. There is a growing interest in animal industry throughout the State, and this course is intended to meet the demand for more specialized training in this phase of agriculture. In order to afford more time for instruction in these branches, some important, but less essential studies, have been omitted; but mathematics is retained through the second year and a special course in rural engineering put in the third year. English, history and civics are retained throughout the course, drawing the first year, physics the second year, geology the last year and chemistry the last three years, but slightly reduced and changed to meet the demands of this new course. Botany, bacteriology, zoology and entomology are so planned as to begin in the first year of the course and thereby contribute to clearer knowledge of farm crops, live stock, dairying, sanitation and animal diseases. General agriculture is taught during the first two years, horticulture the third and veterinary medicine the last three years; while live stock and dairying are taught throughout the course. The live stock work embraces the study of the breeds of horses, cattle, sheep, hogs and poultry, and includes judging, breeding, feeding, care and management of flocks and herds. In the dairy course are taken up the production, handling, manufacture and marketing of whole milk, cream, ice-cream, butter and cheese.

COURSE II.—AGRICULTURE AND ANIMAL INDUSTRY

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521)	5	5	5	Shop Work (240, 261)	3	3	3
English (501)	5	5	5	Freehand Drawing (231)	3	3	3
History (511, 512)	3	3	3	Rural Architecture (233)	3	3	3
Agriculture (100)	2	2	—	Agriculture (100)	3	3	3
Live Stock (150)	—	—	2	Military Drill (602)	3	3	3

Sophomore Class

Mathematics (522)	5	—	—	Veterinary Science (130, 131) ..	—	2	2
English (502)	3	3	3	Chemical Laboratory (301) ...	3	2	2
Chemistry (300)	3	3	3	Botanical Lab. (171)	4	—	—
Physics (220)	2	2	2	Surveying Field (530)	—	2	2
Surveying (530)	—	2	2	Physiological Lab. (140)	—	2	2
Physiology (140)	—	1	1	Agriculture (101)	3	2	2
Agriculture (101)	—	2	2	Live Stock (154)	2	2	2
Live Stock (152, 153)	2	2	2	Military Drill (602)	3	3	3

Junior Class

English (453)	2	2	2	Rural Engineering (534)	2	—	—
History (513, 514)	2	2	2	Chemical Laboratory (303) ...	4	4	4
Chemistry (302)	2	2	2	Zoological Lab. (141)	—	—	4
Rural Engineering (534)	2	—	—	Horticulture (120, 121)	2	2	2
Zoology (141)	—	—	4	Dairying (163)	4	2	—
Horticulture (120, 121)	2	2	2	Veterinary Science (131, 135) ..	—	2	2
Dairying (161)	2	4	—	Live Stock (155)	—	2	—
Veterinary Science (132, 133) ..	2	2	2	Military Drill (602)	3	3	3
Military Science (600)	1	1	1				

Senior Class

English (504)	—	2*	3	Chemical Laboratory (305) ...	3	3	3
Political Economy (515)	3	2*	—	Entomological Lab. (142)	3	3	—
Chemistry (304)	2	2	2	Bacteriological Lab. (173, 175) ..	—	3	3
Geology (112)	2	4	—	Live Stock (159)	3	—	3
Bacteriology (173, 175)	—	—	4	Veterinary Science (139)	3	3	3
Stock Feeding (157, 158, 160) ...	3	3	3	Military Drill (602)	3	3	3
Veterinary Science (136-7-8) ..	4	3	2				
Military Science (601)	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSES III.—METALLURGY AND GEOLOGY

This course is intended to equip the student for engaging in manufacturing operations involving metallurgy or other branches of inorganic chemistry, or for employment as assayer or chemist in connection with mining operations. It also furnishes a basis upon which he may readily specialize in mining or geology, with a view to conducting actual mining enterprises or to employment in responsible positions on state or national surveys.

The student is well grounded in the principles of chemistry, physics, mechanics, geology and mineralogy, but the principal stress is laid on geology and metallurgical chemistry. He also acquires valuable practical knowledge of surveying, mechanical engineering, foundry practice, drawing and designing, in addition to the pursuit of courses in English, history, political economy, and other subjects of general educational value.

The first two years of the course are the same as in the engineering courses. The third and fourth years differ chiefly in the substitution of advanced work in chemistry and metallurgy and in geology and mineralogy for the higher mathematics and technical engineering work.

For further particulars see the detailed descriptions of subjects tabulated on the opposite page.

COURSE III.—METALLURGY AND GEOLOGY

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521)	5	5	5	Woodwork (260)	3	3	3
English (501)	5	5	5	Freehand Drawing (230)	3	3	3
History (511, 512)	3	3	3	Mechanical Drawing (232)	3	3	3
Agriculture (100)	2	2	2	Forge Work (240)	3	3	3
				Military Drill (602)	3	3	3

Sophomore Class

Mathematics (522-4-5)	5	3	3	Foundry (241)	2	3	3
English (502)	3	3	3	Pattern Making (262)	2	3	3
History (513, 514)	2	2	2	Mechanical Drawing (234)	2	2	2
Chemistry (300)	3	3	3	Chemical Lab. (301)	3	2	2
Physics (220)	2	2	2	Descriptive Geom. (523)	3	—	—
Surveying (530)	—	2	2	Surveying Field (530)	—	2	2
				Military Drill (602)	3	3	3

Junior Class

English (503)	2	2	2	Assaying (303)	2	2	2
Chemistry (302)	2	2	2	Chemical Lab. (303)	4	4	4
Mineralogy (111)	3	3	3	Mineralogical Lab. (111)	2	2	2
Geology (113)	3	3	3	Mechanical Drawing (237)	2	2	2
Physics (221)	2	2	2	Physical Lab. (222)	2	2	2
Mechanism (210)	2	—	—	Military Drill (602)	3	3	3
Mechanics (211)	—	2	2				
Military Science (600)	1	1	1				

Senior Class

English (504)	—	2*	3	Chem. and Metallurgical Lab-			
Pol. Economy (515)	3	2*	—	oratory (311)	6	6	6
Chemistry (306)	2	2	2	Practical Geol. (116)	3	3	3
Metallurgy (310)	2	2	3	Mechanical Lab. (215)	3	3	3
Economic Geology (115)	2	3	4	Military Drill (602)	3	3	3
Petrography (114)	2	2	2				
Mechanical Eng. (213)	3	3	—				
Military Science (601)	1	1	1				

*Political Economy ends and Senior English begins at the middle the of second term.

COURSE IV.—MECHANICAL AND ELECTRICAL ENGINEERING

This course is designed to fit young men for responsible positions in the various departments of these professions. It attempts, by practical and theoretical instruction, to lay a solid scientific foundation upon which the student may build rapidly after graduation. The experience necessary to make a successful engineer cannot be acquired in a college course, but the technically educated graduate usually soon distances his uneducated competitors.

While devoting considerable time to purely technical work, it is recognized that to obtain the best ultimate results, the student should be given a thorough training in the English language and as broad and liberal a culture as the time available and his previous preparation will permit. Seeking in some degree to attain this end, such studies as history, English literature, civics, economics, geology, and botany are taught in the course, as well as the partly technical sciences, mathematics, physics, and chemistry.

Within the department are taught physics, mechanics, and mechanical and electrical engineering. Along with the theoretical instruction in these subjects, practice is given in laboratories equipped with the best modern apparatus.

Shop instruction is given in carpentry, turning, and pattern making; in moulding; chipping and filing, and the use of machine tools. The purpose of this instruction is not to turn out skilled artisans, but rather men capable of directing enterprises into which these trades enter as component parts.

The work in drawing is made one of the features of the course, including instruction in freehand drawing in the first year, mechanical drawing during the first three years and machine design in the fourth year.

Graduates from this course are filling responsible positions in various lines of mechanical and electrical engineering and in drawing.

COURSE IV.—MECHANICAL AND ELECTRICAL ENGINEERING

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Woodwork (260).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (230).....	3	3	3
History (511, 512).....	3	3	3	Mechanical Drawing (232) ...	3	3	3
Agriculture (100).....	2	2	2	Forge Work (240).....	3	3	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522-4-5).....	5	3	3	Foundry (241).....	2	3	3
English (502).....	3	3	3	Pattern Making (262).....	2	3	3
History (513, 514).....	2	2	2	Mechanical Drawing (234)....	2	2	2
Chemistry (300).....	3	3	3	Chemical Lab. (301).....	3	2	2
Physics (220).....	2	2	2	Descriptive Geom. (523).....	3	-	-
Surveying (530).....	-	2	2	Surveying Field (530).....	-	2	2
				Military Drill (602).....	3	3	3

Junior Class

Mathematics (525-527).....	5	5	5	Mechanical Drawing (235)....	3	3	3
English (503).....	2	2	2	Machine Shop (250).....	3	3	3
Physics (221).....	2	2	2	Physical Lab. (222).....	3	3	3
Electrical Eng. (200).....	3	3	3	Electrical Lab. (201).....	3	3	3
Mechanism (210).....	2	-	-	Military Drill (602).....	3	3	3
Mechanics (211).....	-	2	2				
Military Science (600).....	1	1	1				

Senior Class

English (504).....	-	2*	3	Machine Shop (251).....	3	3	3
Political Econ. (515).....	3	2*	-	Machine Design (238)....	3	3	3
Electrical Eng. (202).....	5	5	5	Electrical Lab. (203).....	3	3	3
Mechanical Eng. (213).....	3	3	5	Mechanical Lab. (214).....	3	3	3
Mechanics (212).....	2	2	-	Military Drill (602).....	3	3	3
Geology (112).....	1	2	1				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE V.—CIVIL ENGINEERING

This course is intended to prepare young men for entrance upon professional practice in some of the many branches of civil engineering, and also to meet the needs of those who, having been engaged in engineering work without a course of instruction, desire to equip themselves for more successful competition with those who have had such instruction.

In connection with the technical studies, liberal training is given in English, history, economics, pure mathematics and the physical sciences. The course will also be found to embrace the same amount of drawing, shop work, mechanical engineering and mechanical laboratory practice as the other engineering course.

The distinctive work pursued by students in this course includes the study of land surveying and plotting, topographic surveying and mapping; location, construction, and maintenance of roads, railroads, streets, and pavements; strength of building materials, masonry construction, foundations on land and in water; analytic and graphic investigations of stresses in girders, roofs, and bridges, and the design of these structures; the principles of hydraulics as applied to dams, reservoirs, canals, municipal water works, and the development of water power.

For fuller details, see descriptions of instruction in these subjects.

COURSE V.—CIVIL ENGINEERING

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week.		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521)	5	5	5	Woodwork (260).....	3	3	3
English (501)	5	5	5	Freehand Drawing (230)	3	3	3
History (511, 512).....	3	3	3	Mechanical Drawing (232)....	3	3	3
Agriculture (100).....	2	2	2	Forge Work (240).....	3	3	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522-4-5).....	5	3	3	Foundry (241).....	2	3	3
English (502)	3	3	3	Pattern Making (262).....	2	3	3
History (513, 514).....	2	2	2	Mechanical Drawing (234)....	2	2	2
Chemistry (300)	3	3	3	Chemical Lab. (301).....	3	2	2
Physics (220).....	2	2	2	Descriptive Geom. (523).....	3	—	—
Surveying (530).....	—	2	2	Surveying Field (530).....	—	2	2
				Military Drill (602).....	3	3	3

Junior Class

Mathematics (525-527).....	5	5	5	Mechanical Drawing (236)....	3	3	3
English (503)	2	2	2	Machine Shop (250)	3	3	3
Physics (221).....	2	2	2	Physical Lab. (222)	2	2	—
Civil Engineering (531-3)....	3	3	3	Civil Eng. Field (531-3).....	4	4	3
Mechanism (210)	2	—	—	Mineralogical Lab. (110) ..	—	—	3
Mechanics (211)	—	2	2	Military Drill (602).....	3	3	3
Military Science (600).....	1	1	1				

Senior Class

English (504)	—	2*	3	Mechanical Drawing (239)....	3	3	3
Political Econ. (515).....	3	2*	—	Mechanical Lab. (214).....	3	3	3
Civil Engineering (535-7)....	5	5	5	Civil Eng. Field (535-7).....	6	6	6
Mechanical Eng. (213)	3	3	5	Military Drill (602).....	3	3	3
Mechanics (212)	2	2	—				
Geology (112).....	1	2	1				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE VI.—TEXTILE INDUSTRY

This department was established primarily to direct young men in their study of the textile fibers, to teach their manipulation, and the after processes of manufacture required by the trade.

The principles underlying the art of manufacture are taught by lecture, text-book, and experiment; skill is acquired by intimate contact with the machinery equipment, which consists of various types of machines designed by the prominent builders of cotton machinery in this country.

The aim has been to arrange a course in which the student will be allowed the opportunity of acquiring a good general education along with this special training in textiles. For this reason, in order to allow time to be devoted to culture studies, and to instruction in the general principles of the sciences involved in manufacture, the course does not follow special lines closely until the junior year.

During the junior and senior years, in which more time is devoted to textile subjects, the student is brought face to face with facts and conditions, from the proper observation and study of which he may obtain information and experience that would take him years to acquire in the mills.

This course does not presume to fit one for the active management of a mill immediately upon graduation, but is intended to give the student a broad foundation on which to specialize, and the graduate is in possession of such information, and has acquired such experience and knowledge in handling raw materials and manufacturing machinery as, if supplemented by energy, application, and tact, will soon place him among leading cotton manufacturers.

COURSE VI.—TEXTILE INDUSTRY

(Numbers in parentheses refer to descriptions beginning on page 85.)

Freshman Class

	Hours per week				Hours per week		
	1st Term	2d Term	3d Term		1st Term	2d Term	3d Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521)	5	5	5	Woodwork (260)	3	3	3
English (501)	5	5	5	Freehand Drawing (230)	3	3	3
History (511, 512)	3	3	3	Mechanical Drawing (232)	3	3	3
Agriculture (100)	2	2	2	Forge Work (240)	3	3	3
				Military Drill (602)	3	3	3

Sophomore Class

Mathematics (522, 4-5)	5	3	3	Foundry (241)	2	3	3
English (502)	3	3	3	Pattern Making (262)	2	3	3
History (513, 514)	2	2	2	Mechanical Drawing (234)	2	2	2
Chemistry (300)	3	3	3	Chemical Laboratory (301)	3	2	2
Physics (220)	2	2	2	Descriptive Geom. (523)	3	—	—
Surveying (530)	—	2	2	Surveying Field (530)	—	2	2
				Military Drill (602)	3	3	3

Junior Class

Mathematics (525)	5	5*	—	Machine Shop (250)	3	3	3
English (503)	2	2	2	Chemical Lab. (303, 420)	3	3	3
Textile Chemistry (420)	2	2	2	Weaving (410, 411)	3	3	3
Designing (412)	2	1*	4	Carding & Spinning (400-406)	3	5	3
Carding & Spinning (400-406)	1	2*	4	Military Drill (602)	3	3	3
Mechanism (210)	2	—	—				
Mechanics (211)	—	2	2				
Military Science (600)	1	1	1				

Senior Class

English (504)	—	2†	3	Mechanical Laboratory (215)	—	3	3
Political Economy (515)	3	2†	—	Cam Drawing (238)	2	—	—
Mechan. Engineering (213)	3	3	—	Carding & Spinning (407-409)	3	2	3
Carding & Spinning (407-409)	2	2	2	Dyeing (421)	4	4	3
Textile Chemistry (421)	2	2	2	Weaving (410, 411)	4	4	4
Designing (412)	3	2	2	Military Drill (602)	3	3	3
Cloth Analysis (414)	—	2	2				
Jacquard Designing (413)	—	—	2				
Military Science (601)	1	1	1				

*Upon completion of Analytical Geometry (525), the time devoted to Junior Designing and to Carding and Spinning is increased to 4 hours each in the second term.

†Political Economy ends and Senior English begins at the middle of the second term.

Special Courses

Besides students in the usual undergraduate courses, there may be farmers and others of mature age, including graduates of other institutions, who desire to avail themselves of the special privileges offered by the College. To such persons the opportunity is offered, under the advice of the director of the department in which work is contemplated, to pursue special lines of study or investigation in any of the subjects taught in the College, provided attention can be given to them without detriment to the regular classes. Such special students will be admitted after they have satisfied the director of the department that they are qualified to pursue the work with profit.

Special students are excused from military duty, but are subject to the general regulations of the College requiring good conduct and diligent prosecution of the course selected. They are not admitted to barracks, but rooms and board may be secured in the community at reasonable rates. They will be required to pay the usual fees, except the price of the uniform and board in barracks.

Special Course in Electrical Engineering

Students desiring to take a special course in electrical engineering should remember that no one can hope to become an electrical engineer who has not the necessary foundations in mechanical engineering, to which electrical engineering is a superstructure. Two-thirds of an electrical engineer's training must be mechanical. No special classes will be formed, and students desiring to enter the junior class will be expected to be prepared on elementary mechanical drawing, physics and chemistry, and on mathematics, through plane trigonometry. They will be expected to take with the junior class, in addition to their electrical studies, physics, mechan-

ics, mathematics, mechanical drawing and machine shop work. Without these additional branches the student will not be prepared for the more strictly engineering work of the senior year.

To enter the senior class, a student must be proficient in the work of the junior year, in which physics and calculus are completed.

In addition to the electrical subjects prescribed for the senior year, he must take—unless he is proficient along these lines—mechanics, mechanical engineering and laboratory, machine shop, drawing and machine design.

Students who are not prepared, or are not willing to take the other subjects necessary to successful study of electrical engineering, will not be permitted to take a special course in this line.

Special Textile Course

To meet the demands of southern conditions for a class of young men trained in the finer details of cotton manufacture, a special two-year course has been arranged to accommodate a limited number of students who may not be in a position to take the regular four-year textile course, as scheduled and described on the preceding pages.

The course includes carding, spinning, designing, and weaving, and is thoroughly practical. Since it does not include any of the other subjects treated in the regular four-year course, it allows the student to devote his entire attention to the pursuit of textiles in its several branches.

To pursue this course successfully, the student must be well grounded in arithmetic, and should be capable of expressing his thoughts clearly in writing. The student seeking admission to this course must present himself at the College during the regular entrance examination period, September 7th to 12th, 1905, and satisfy his instructors that he is prepared to

undertake the work. No student will be admitted after that time. Students must be at least 18 years of age, and since they will not be required to perform military duty, must arrange for board outside of barracks. They will, however, be subject to the general rules and regulations of the College. Students who have failed in the regular College courses will not be allowed to change to this course. No diploma is conferred upon the completion of this work.

Irregular Courses

Every student is required to pursue one of the regular courses, as scheduled on the preceding pages, unless for special reasons this seems inadvisable or impracticable. In such cases an irregular course may be granted by the Faculty on the following conditions:

1. The course applied for must be such as to fully and profitably occupy the student's time.
2. The application must be accompanied by the written approval of parent or guardian and of instructors in all subjects included in the course.
3. Irregular courses are not granted to students in the preparatory class.
4. Diplomas are not issued to students in irregular courses, but a certificate of proficiency will be given when the work completed is deemed worthy of it.

A student who desires to take an irregular course will be referred to a member of the Faculty, who will advise him in reference to the character of work that is best for him to pursue. After the course has been thus arranged and approved by the Faculty, no other changes will be allowed without the endorsement of his adviser.

Preparatory Courses

For the benefit of students who are not prepared to enter the College classes a course of one year of preparatory work

is provided, in which thorough instruction is given in the elements of English, mathematics, history, and geography. This course is designed to meet the needs of young men, particularly farmers' sons, who have not had the advantages of the thorough and systematic training afforded by many of the town and city schools.

The instruction in this department is under the immediate supervision of the professors of English, mathematics, history, and geology in the College, and is closely articulated with the work of the advanced classes.

The course of study is as follows :

Arithmetic, 5 hours a week.

Algebra, 5 hours a week.

Grammar and Composition, 5 hours a week.

Reading and Spelling, 5 hours a week.

Geography, 3 hours a week for last two terms.

History, 2 hours a week.

Students who satisfactorily complete this course will be advanced to the freshman class. Those who fail to pass to the higher class may review the course the next session. Upon recommendation of the instructors of the department, a student in the preparatory class may be permitted, at any time during the session, to stand examinations for admission to the freshman class.

Reports, Grades and Promotions

Reports of class-standing and discipline are sent to parents at intervals of approximately one month throughout the session. During 1905-1906 these reports will be made up for the periods ending on the following dates, and will usually be mailed to parents about one week later : Oct. 13th, Nov. 10th, and Dec. 14th,* 1905 ; Feb. 2d, Mar. 9th,* Apr. 20th, and May 25th,* 1906. Dates marked with the asterisk (*) are ap-

proximate, depending upon the beginning of the respective term examinations.

The session is divided into three terms, ending Dec. 22d, 1905, Mar. 2d, and June 2d, 1906, respectively. Examinations are held at the close of each term, and reports are sent to parents giving the results of these examinations and also the averages of monthly grades in all subjects pursued by the student. The student must attain at least the pass-mark, 60 per cent., on both examination grade and term average in each term separately and in every subject in his course, in order to be entitled to promotion to the next higher class.

No student is entitled to a second examination in any subject, except by special permission of the Faculty. In case of only one or two failures such permission is usually granted, provided the student's record indicates a reasonable degree of application to his studies.

Students whose conditions have not been removed by the opening of the next session will be required to take the work of the preceding year over, unless for special reasons an extension of time is allowed.

Students who are taking over the work of any year in a regular course, or who for any reason have been put back from a higher to a lower class, are required to take the full work of that class.

A student taking any subject over waives the right to all previous records in that subject, and is placed upon the same footing as students taking the work for the first time.

Parents will be advised to withdraw students who habitually shirk duties.

Degrees, Medals and Honors

The degree of Bachelor of Science (B. S.) will be conferred on any student who satisfactorily completes one of the prescribed four-year courses of study, as tabulated on the

preceding pages, and submits an approved thesis not later than June 1st of his senior year. The course pursued is indicated on the diploma.

Distinguished Students.—Students who make first grade (90 per cent. or over) in all studies for any session are designated as *distinguished*, and their names are published in the catalogue of the succeeding year.

Trustees Medal.—The Board of Trustees has established a gold medal to be awarded annually to the best speaker among the representatives of the literary societies at commencement. These representatives are chosen by judges selected by the societies at the annual public exercises in Memorial Hall. The medal is awarded by judges selected by the Faculty. Won in 1904 by A. J. Speer, '05.

Literary Society Medal.—It is customary for the three literary societies to award gold medals annually for excellence in debate, oratory, and declamation. The medals for excellency in debate were won by J. R. Connor, Calhoun; J. P. Tarbox, Columbian; W. L. Templeton, Palmetto.

In oratory by C. E. Jones, Calhoun; C. Norton, Columbian; A. J. Speer, Palmetto.

In declamation by V. Baker, Calhoun; J. E. Johnson, Columbian; D. H. Hill, Palmetto.

The Chronicle Medals.—*The Chronicle*, the monthly magazine published by the literary societies, also usually awards three gold medals, for the best story, the best poem, and the best essay contributed by students during the year. Won in 1904 by D. W. Anderson for best story, by R. E. Miller for best poem, and by J. R. Connor for best essay.

The Colors of Battalion are awarded at the close of each session to the best drilled battalion, and are carried by it dur-

ing the succeeding session. In June, 1904, this distinction was won by the Second Battalion, V. M. Williams, Cadet Major.

A blue silk C. A. C. Flag is awarded June of each year to the best drilled company, and carried by it during the succeeding year. This was won in June, 1904, by Company "C," R. E. Miller, Captain.

R. W. Simpson Medal.—A gold medal thus designated is awarded annually to the best drilled cadet in the freshman, sophomore and junior classes. This medal was won in 1904 by Cadet LeRoi Boggs, class of 1907.

Publication in Official Army Register.—The names of the three graduates most distinguished in the Military Department each year are published in the Official Army Register of the succeeding year.

The Commandant is also required to report annually to the War Department the names of the three cadets most eligible for appointment as officers in the United States Army.

Second Lieutenancy U. S. Army.—General Orders, No. 39, War Department, contains the following paragraph:

"The reports of the regular inspections of the colleges and schools to which officers of the Army are detailed in pursuance of law as principals or instructors will annually hereafter be submitted to the General Staff for its critical examination, and the Chief of Staff shall report to the Secretary of War, from the institutions which have maintained a high standard, the six institutions whose students have exhibited the greatest interest, application, and proficiency in military training and knowledge. The President authorizes the announcement that an appointment as second lieutenant in the Regular Army from each one of the said six institutions will be awarded to

an honor graduate who has taken a military course thereat, provided that sufficient vacancies exist after caring for the graduates of the Military Academy at West Point and the successful competitors in the annual examination of enlisted men."

The term "honor graduate" signifies any graduate who would rank as one of the first five of his class.

Fees and Expenses

The regular fees and charges for the session of 1905-1906 will be as follows :

Incidental fee	\$5 00
Medical fee	5 00
Uniform ..	23 00*
Board and washing.....	67 52
Breakage fee	3 00
Tuition ..	40 00
Total ..	\$143 52

These charges must be paid in quarterly installments as follows :

September 13th, 1905.....	\$62 88
November 17th, 1905.....	26 88
January 31st, 1906.....	26 88
April 6th, 1906.....	26 88

Remittances should be made in cash, or by money order or New York exchange—*not by local check*—to Dr. P. H. E. Sloan, Treasurer, Clemson College, S. C. Banks charge exchange on local checks.

A deduction will be made for board and washing only when a student is absent one month or more.

The breakage fee is a deposit to cover damage or destruction of College property, and any amount remaining to the credit of a student at the end of the session will be returned to him. Whenever College property is damaged the cost of repair is charged to the individual student, if the responsibility can be determined. Otherwise the cost is divided equally among all the students. Any student whose breakage

*The price of uniform is subject to market fluctuations.

account exceeds \$3.00 will be required to make another deposit.

A fee of \$1.50 is charged for diploma, payable before graduation.

The above charges do not include cost of books and stationery, which, however, may be obtained at the Cadet Exchange at wholesale prices.

Each student must provide himself with 4 sheets, 2 blankets, a comfort, 6 towels, 1 pillow, 2 pillow cases. Beds are single width.

Free Tuition

Section 1120, Revised Statutes of South Carolina, 1893, Vol. I., setting forth the powers and duties of the Board of Trustees, contains the following provision:

"They shall charge each student a tuition fee of forty dollars per annum; . . . indigent students shall not be required to pay said tuition fee."

In accordance with this law, residents of South Carolina are granted free tuition upon presentation of the following certificate, properly signed:

CERTIFICATE OF INABILITY TO PAY TUITION.

THIS IS TO CERTIFY, *That I am unable to pay tuition for my*
*in the Clemson Agricultural College*
for the session of 1905-1906.

.....
 Father or Guardian.

.....
I hereby certify that, to the best of my knowledge and belief, the
above statement is true.

.....
 County Auditor.

Certificate blanks will be furnished upon application to the President.

For students receiving free tuition the quarterly charges will be \$10 less in each case than the amounts given above, namely:

September 13th, 1905.....	\$52 88
November 17th, 1905.....	16 88
January 31st, 1906.....	16 88
April 7th, 1906.....	16 88

The total charges for the year in such cases are only \$103.52.

Agricultural Scholarships

By an Act of the State Legislature in the session of 1904, 124 beneficiary scholarships were established, of the value of \$100 per annum each, and apportioned among the counties in the same manner as the members of the House of Representatives.

The law provides "That the said scholarships shall be awarded by the State Board of Education, upon the recommendation of the County Boards of Education of the several counties, to the most worthy and needy young men of such age as is fixed by the Board of Trustees of said College for other students, who shall have passed an approved entrance examination upon the common school branches and made at least sixty per cent. upon such examination; and preference shall be given to those young men who desire to take the agricultural course."

Examination questions are to be prepared by the President and Faculty of the College and sent to the County Board of Education of each county on or before the 15th day of July in each year, with a statement of the number of vacant schol-

arships to which the county is entitled. The County Board holds the examinations, grades the papers, and forwards them with recommendations to the State Board of Education.

Section 4 reads, "That before applying for said scholarships applicants shall make proof under oath to their respective County Boards of Education, as required by law for scholarships in the South Carolina Military Academy, of their financial inability to attend college, before they shall receive from said Board permission to stand such examination."

The law further provides that these scholarships "shall each continue for the term of four years, or for such length of time as the beneficiary shall be able to maintain himself and comply with the rules of the College; and said sum of one hundred dollars per annum shall be placed to the credit of each of said beneficiaries, and applied towards the payment of his board and other necessary school expenses."

COUNTY APPORTIONMENT

The one hundred and twenty-four scholarships provided for in this institution by the Legislature are apportioned to the Counties of the State according to law, as follows:

Abbeville	3	Hampton	2
Aiken	4	Horry	2
Anderson	5	Kershaw	2
Bamberg	2	Lancaster	2
Barnwell	3	Laurens	3
Beaufort	3	Lee	2
Berkeley	3	Lexington	3
Charleston	8	Marlboro	3
Cherokee	2	Marion	3
Chester	3	Newberry	3
Chesterfield	2	Oconee	2
Clarendon	3	Orangeburg	5
Colleton	3	Pickens	2
Darlington	3	Richland	4
Dorchester	1	Saluda	2
Edgefield	2	Sumter	3
Fairfield	3	Spartanburg	6
Florence	3	Union	2
Georgetown	2	Williamsburg	3
Greenville	5	York	4
Greenwood	3		

GROUNDS, BUILDINGS AND EQUIPMENT

Grounds and Buildings

CAMPUS AND FARM.—The College grounds occupy about 1,122 acres of land, including the campus, sites of buildings and residences, grounds for military drill and outdoor athletics, the College farm, and the Experiment Station grounds. The campus, including about 200 acres, is laid out in walks, drives and lawns, and is shaded by a beautiful grove of native forest trees. The campus has been greatly improved during session 1904-1905, under the supervision of Mr. G. A. Parker, Vice-President of Parks and Public Reservations of the American Civic Association.

The Main Building, Barracks, Etc.

THE MAIN BUILDING is a three-story brick structure, 130 by 140 feet, trimmed with gray sandstone. It contains twenty-two rooms, including recitation rooms, library and reading room, literary society and Y. M. C. A. Hall, physical laboratory, besides the offices of the President, the Commandant, the Treasurer, and the Secretary of the Board of Fertilizer Control. Adjoining this building is Memorial Hall, the College chapel, which has a seating capacity of about 1,000. It is used for religious services and as an assembly room. The building is provided with steam heat and electric lights.

THE CADET BARRACKS comprise two large brick buildings. One is three stories high and contains one hundred and forty-seven rooms for students, a dining hall 134 by 44 feet, and a kitchen 50 by 37 feet. The other building is 199 by 42 feet, and contains 104 rooms. These buildings are heated by steam and lighted by electricity, and have an abundant supply of pure spring water. The rooms in the barracks are furnished with single width iron cots and other necessary appointments. The dining hall is well supplied

with table linen, silver ware, and china, and the kitchen is furnished with modern culinary appliances.

The bath rooms and closets are located in brick buildings apart from the barracks and connected with them by covered gangways.

THE HOSPITAL, located about a quarter of a mile from the barracks, is a wooden building, especially designed for the purpose. It is lighted by electricity, and has a thorough sewerage system. The hospital is in the immediate charge of the Surgeon, who is assisted by an experienced matron and nurses, thus ensuring the best personal attention to each patient.

THE LAUNDRY is a brick building specially constructed and fitted with the improved machinery of a modern steam laundry, and is operated exclusively for students.

Agricultural Buildings

THE AGRICULTURAL HALL is a building 146 by 94 feet, in colonial style, and constructed of red side-cut brick, with columns and trimmings of oolitic limestone. It is furnished with a complete system of electric lights, water and sewer connections, and steam heat; and provides class-rooms and laboratories for instruction in agriculture, horticulture, soil physics, botany and bacteriology, zoology and entomology, veterinary science, dairying and animal industry, geology and mineralogy, and offices for the Experiment Station. It also contains a room 40 by 60 feet, with a gallery, for a natural history museum, and a gymnasium hall of the same dimensions below.

THE HORTICULTURAL GROUNDS embrace an area of thirty acres. Eight acres are devoted to apples for experiment purposes, six acres to peaches, two acres to grapes, two acres



MAIN BUILDING AND CORPS OF CADETS

to pecans, one acre to plums, seven acres to experiments with small fruits and vegetables, and three acres to ornamental trees, shrubs and flowers.

THE GREENHOUSE is 21x140 feet and is heated by hot water. It is used for class instruction in ornamental horticulture and for experiment work. The house now contains three thousand large pot plants of various kinds and nine thousand small plants used for bedding purposes on the College campus.

THE CANNERY is a frame building 25x35 feet. It is equipped for canning fruits and vegetables of all kinds.

THE VETERINARY HOSPITAL is a two-story frame building 48 by 65 feet, with basement 18 by 30 feet. It is furnished with electric lights, hot and cold water and is heated by means of stoves. The basement contains dissecting room and a small room for hot water plant, coal and general storage. On the first floor are rooms for office, instruments and medicines, toilet, horse shoeing, harness closet, and an examining floor, operating table, soaking vat, three box stalls and three tie stalls. On the second floor are rooms for attendant, pharmacy, storage of grain, kennels and cages for small animals and a hay mow.

Convenient to this building is a shed 24x40 feet, enclosed on three sides, but well lighted, and it has a large hay loft. There is a well sodded lot containing about two acres connected with the hospital. It is fenced with woven wire and divided into three paddocks. In one of these is an open cattle shed 13 by 32 feet, and a chute used in dehorning, inoculations, and other operations where a herd is to be handled.

THE DAIRY BUILDING is a wooden structure constructed and equipped especially to illustrate the most approved methods of dairy practice.

THE EXPERIMENT STATION DAIRY BARN is a new building, 110 by 38 feet, located on one of the highest elevations of the College property. It is a thoroughly modern structure from the standpoint of both convenience and sanitary conditions. It has a concrete floor, is lighted by electricity, and contains water in all parts of the building for washing floors, mixing food, etc. It is fitted with 38 Taylor steel stanchions, which are both strong and comfortable. At one end of the building are four 50-ton silos, and the second floor, which has a capacity of 50 tons of loose hay, is equipped with a hay carrier that will elevate a load of hay at a time.

A smaller barn, 50 feet in the rear, provides hospital stalls for sick cows, and also stalls and pens for young calves.

A number of paddocks and pastures have been provided to facilitate the management and to furnish sufficient pasturage for the stock.

FARM BUILDINGS.—The College farm is provided with commodious barns and other farm buildings of modern design, which are described more fully in connection with the equipment for instruction in agriculture.

Mechanical and Electrical Buildings

THE MECHANICAL BUILDING is a substantial brick structure containing about 30,000 square feet of floor space. On the first floor are the mechanical laboratory, machine shop, forge shop, foundry, and the power and light station. On the second floor are the offices and recitation rooms, while the wood shop occupies the whole of a two-story wing, 45 by 100 feet. The third floor is entirely occupied by the division of drawing.

THE ELECTRICAL INSTRUMENT LABORATORY is a brick building of special design, arranged especially for delicate instrument work.

THE DYNAMO LABORATORY is a modern brick structure, 37 by 80 feet. Besides containing the dynamo electric machinery for instructional use, it also contains the electrical engineering lecture room.

Chemical Buildings

THE CHEMICAL DEPARTMENT occupies two buildings. One is a two-story brick structure, 50 by 80 feet, covered with slate, and finished inside with Southern pine. Overlapping this at one corner, and connected with it, is a new and somewhat similar building, 53 by 86 feet, of modern style and handsome design. This double building constitutes a commodious structure adequate to all the needs of the department.

Textile Buildings

THE TEXTILE BUILDING is a two-story brick structure, with basement, of modern cotton mill design. The first floor is occupied by a recitation room, carding and spinning rooms, and an office. On the second floor are the designing and weaving rooms, a laboratory for experimental dyeing, and two offices. In the basement is located the dyeing, bleaching and printing machinery.

Residences and Hotel

THE CALHOUN MANSION, the former residence of John C. Calhoun, is kept in honor of his memory, in accordance with the provisions of Mr. Clemson's will.

RESIDENCES.—Ten two-story brick buildings, nine six-room cottages, and twenty-eight smaller houses, all situated on the campus, furnish residences for professors and other officers of the College.

CLEMSON CLUB HOTEL.—The College Hotel, a frame building, situated on a hill overlooking the campus, is operated as a club by several members of the Faculty. In addition to furnishing a home for the members of the club, it is open the entire year to a limited number of transients.

Water, Light and Heat

THE GENERAL WATER SUPPLY is collected from springs through iron pipes into a reservoir, from which it is pumped into a standpipe one hundred feet high. From this it is distributed through mains to the various College buildings and to all parts of the campus.

THE DRINKING WATER SUPPLY is pumped from a bold spring directly into barracks, in a continuous stream. It is thus furnished fresh, pure and cold. This and all sources of water supply are kept under constant and strict surveillance and the waters are frequently analyzed as a precaution against contamination.

THE SEWER SYSTEM.—All of the larger buildings are connected with an adequate sewer system, which empties into Seneca River more than half a mile from the campus.

LIGHT AND HEAT.—All of the College buildings and most of the residences on the campus are lighted by electricity furnished from the central power station in the Mechanical building. The seven principal College buildings are also heated by steam.

Equipment for Practical Instruction

Agricultural Department

Agriculture

The class room, laboratory and office of the agricultural division are located on the first floor of Agricultural Hall, rooms 11, 12 and 13. The laboratory is supplied with the necessary equipment, for familiarizing students with the more important economic plant seed.

The College farm has a large storage barn provided with silos, a cow barn furnished with various forms of stanchions, a mule barn provided with the most improved forms of stalls and feed-racks, implement and wagon sheds for storage of tools, etc., compost building for making compost in large quantities, and two large cribs for storage of corn.

Among agricultural machinery and implements may be mentioned the following: Self-binder, corn-harvester, Deering ball-bearing mower, Osborne mower, self-dumping rake, check-row corn planter, Buckeye cultivator, B. F. Avery cultivator, Tower cultivator, disc-cultivator, spring-toothed harrow, smoothing harrows, various forms of pulverizers, manure-spreading machines, fertilizer and grain drill, various forms of small fertilizer drills, Planet Jr. drill, two Planet Jr. plows, scientific mill, stone grist mill, Tornado ensilage cutter, small thresher, hand-gin, rock-crusher, road machine, three terrace levels, and a 10-kw. electric motor.

Geology and Mineralogy

The division of geology and mineralogy occupies three rooms on the second floor of the new agricultural building.

The systematic collections contain about 1,800 labeled specimens of rocks, minerals, and fossils. These are exhibited in glass cases in the laboratory, and are available to

students and public. A collection of the minerals and rocks of South Carolina is a prominent feature of the exhibit. There is also an unlabeled collection of minerals for practice in identifying the more important species at sight, and unlabeled collections of the most important minerals are provided for determinative work in the laboratory.

The laboratory is supplied with water and gas and all apparatus and reagents necessary for the determination of minerals by means of their chemical and physical properties. A chemical balance, a petrographic microscope, a photomicrographic camera, and all important accessories, are also provided.

The class-room is supplied with large physical wall maps of the world and of all the continents, a complete series of topographic contour-maps furnished by the United States Geological Survey, an 18-inch terrestrial globe, a 20-inch relief globe, a set of geological and geographical relief models, and several hundred lantern slides.

The geological department of the College library contains the principal standard works of reference in geology and mineralogy, and receives all publications of the United States Geological Survey as issued, including annual reports, monographs, geologic folios, and bulletins.

Soil Physics

The soil physics laboratory is located on the ground floor of Agricultural Hall and is provided with apparatus necessary for the determination of water content, absorptive capacity, water-holding power, and other physical properties of soils, and for performing experiments in evaporation, percolation, capillarity, etc., and making mechanical analyses.

Veterinary Science

The veterinary hospital has been described in the account of "Grounds and Buildings" on the preceding pages.

The class room, laboratory and office of the Veterinary division are located in Agricultural Hall, the laboratory and office on the first floor, rooms 15 and 16, and the class room on the ground floor. The laboratory is supplied with microscopes, microtome, incubators, sterilizers, chemicals, skeletons, anatomical specimens, plaster casts, and other equipment for technical work. The lecture room has a concrete floor, elevated seats, and is so arranged that the largest domestic animal may at any time be used before the classes for demonstration purposes.

The veterinary hospital is a frame structure of modern design, 48 by 65 feet, containing rooms for office, drugs and dissecting, besides stalls, feed-bins, water supply and electric lights, and a revolving operating table.

Zoology and Entomology

The laboratory, recitation room and office of this division are on the second floor of Agricultural Hall. The laboratory is equipped with simple and compound microscopes, microtomes, dissecting instruments, photographic outfit, stereopticon, lantern slides and charts. The entomological cabinet contains a large number of injurious and beneficial insects.

The students have access to a small but carefully selected entomological library.

Dairying and Animal Husbandry

The dairy building is provided with steam plant and water works, and everything required for making butter and cheese. In this laboratory are located the leading makes of cream separators, churns, and milk-testers.

The new experiment barn is provided with modern apparatus and conveniences for the proper handling of cattle, and the following breeds of cattle have been recently purchased and placed at this barn for experimental purposes: Ayrshire,

Devon, Jersey, Hereford, Polled Angus, Polled Durham; Short-horn (bare-faced dairy strains), Guernsey, Holstein; also six each of registered Shropshire and Southdown sheep.

Botany and Bacteriology

These laboratories are located on the third floor of Agricultural Hall, rooms 21, 22, and 23. They contain a good equipment for satisfactory work in botany and bacteriology, including twenty-five dissecting microscopes, fourteen compound microscopes, student dissecting sets, student microtomes, Zimmermann microtome, embedding baths, balances, water still, incubator, Arnold and Koch sterilizers, autoclave, dry ovens, anaerobic apparatus, cameras for ordinary and photomicrographic work.

The students have access to a small botanical library.

A creditable beginning has been made in collecting a herbarium. This now includes plants collected in the State, plants received by exchange, and a donation of about twenty-five hundred mounted specimens from Dr. A. P. Anderson, which includes many species not present in the flora of South Carolina.

Mechanical and Electrical Department

Electrical Engineering

ELECTRICAL INSTRUMENT LABORATORY.—This is a separate brick building, designed especially for delicate electromagnetic work—no iron, steel or other magnetic substances having been used in its permanent construction. It contains, in addition to all necessary elementary apparatus, the following instruments: Kelvin-Deka ampere balance, Kelvin four-coil astatic galvanometer, four D'Arsonval dead-beat galvanometers, large ring tangent galvanometer, three Elliott Brothers' standard resistance sets, Elliott Brothers' standard

tangent galvanometer, Queen's standard ballistic galvanometer, Nalder Brothers' sensitive galvanometer, Rowland-D'Arsonval ballistic galvanometers, Willyoung standard condenser, Becker's chemical balance, Cahart-Clark standard cell, thermometers, Wheatstone bridges, storage and primary cells, etc.

DYNAMO LABORATORY.—To meet the demands of larger attendance and increased equipment, a new building has been provided in which is installed the dynamo-electric machinery. This building also contains a class room and a dark room for photometric work. It is a single story brick structure, 37x80 feet, with basement for supply rooms.

The main floor is divided into a class room 25x35 feet, and a dynamo laboratory room 53x35 feet. The building is heated by steam and lighted by inclosed arc and incandescent lamps.

The lecture room has elevated seats and is equipped with a complete line of illustration models, apparatus and electrical instruments. It contains an electro magnet capable of supporting the weight of two tons.

The Dynamo Laboratory contains, in addition to rheostats, speed counters, switches, and other small apparatus, the following machines and instruments :

50 H. P. high speed McEwen automatic engine.

Direct Current Generators—15 kilowatt Mather, 17 kilowatt Lundell, 2 1-2 kilowatt Crocker-Wheeler, two 2 kilowatt Kester.

Direct Current Motors—15 and 10 H. P. Kester, three 1-6 H. P. Crocker-Wheeler.

Direct Current Instruments—Weston laboratory standard voltmeter, set of Weston portables, Jewell ammeter and volt-

meter, Weston switchboard ammeter and voltmeter, Thompson recording wattmeter, etc.

Arc Lighting Apparatus—Brush and Thompson-Houston generators, Genl. Elec. Co. constant current transformer, principal makes of open and inclosed arc lamps.

Alternating Current Apparatus—15 kilowatt G. E. Co. 2 and 3 and 6 phase revolving field generator complete with marble switchboard and full set of indicating instruments.

7 1-2 kilowatt G. E. Co. single 2 and 3 phase rotary converter; 7 kilowatt 3 phase converter built by students.

Genl. Elec. Co. 2 and 3 phase induction motors. Three, 3,000 watt constant potential transformers. Assortment of smaller transformers, motors and models.

Alternating Current Instruments—Two Weston and one Genl. Elec. wattmeters, Weston standard A. C. voltmeter, 6 Thompson inclined coil ammeters and voltmeters, Cardew and electrostatic voltmeters, Kelvin ampere balance, Siemens electro-dynamometer, Stanley hot wire ammeter.

Miscellaneous—Two Schaeffer & Budenberg tachometers, leading types of lightning arresters, fuse testing apparatus.

The dark room contains a complete outfit for high potential, high frequency and X-ray work, and a Deshler-McAllister central station type photometer, with rotating stand for incandescent lamp testing.

COLLEGE POWER AND LIGHT PLANT.—The machinery in the dynamo laboratory is driven by the 50 horse power engine or two 20 horse power motors. Steam and electric power for these is furnished by the power plant situated in a neighboring building. This plant consists of an 85 horse power Corliss engine, driving a 40 kilowatt Westinghouse generator and a 30 kilowatt G. E. Co.'s multipolar generator. This

station furnishes power to 20 motors, ranging from 3 to 30 horse power. These motors are used at different points on the College property for a variety of purposes, such as pumping water, driving agricultural machinery, supplying power for machine shop, wood shop, textile department, etc. Several of these are at a considerable distance from the power station, thus furnishing examples of electrical transmission of power. Two of these, 7 horse power each, were built by students. In addition to power for driving motors, the same generators furnish electricity for lighting the barracks and other College buildings. Students have access to this plant, and are thus enabled to see the practical workings of a combined electric light and power plant, and to test its efficiency.

Mechanical Engineering

This laboratory occupies a room 41 by 45 feet, and contains the following equipment:

For Steam Engineering—15 horse-power horizontal, locomotive type boiler; 6 horse-power vertical boiler; Erie 6 horse-power plain slide-valve steam engine; 6 horse-power vertical steam engine built in the shops; Payne 15 horse-power high speed automatic engine; Corliss cross-compound condensing steam engine arranged so that either side may be run condensing or non-condensing and each side independent of the other; Wheeler surface condenser with combined air and circulating pumps; set of steam-gauge testing apparatus; Carpenter's separating steam calorimeter; two throttling steam calorimeters; five steam engine indicators of various makes; two standard injectors.

For Hydraulic Engineering—Two hydraulic rams; Pelton water motor; power triplex pump; three duplex pumps of different makes; three weirs; recording altitude gauge; 6 pressure and altitude gauges.

For Compressed Air—Clayton air compressor with jacketed cylinders ; improved air motor.

For Fuel and Lubricants—Carpenter's fuel calorimeter, with scales, balances, and oxygen generating devices ; standard viscosimeter.

For Testing Building Materials—100,000-pound Olsen automatic vertical testing machine driven by 5-horse power Westinghouse electric motor, and fitted for tension, compression, and transverse testing ; Fairbank's cement testing machine ; 3,000-pound transverse testing machine. The laboratory also contains a 5-horse power Otto gasoline engine, an Ericsson hot-air engine, a 6-horse power transmission dynamometer, graduated to read horse power direct and built by students, and an assortment of standard thermometers, weights and measures. The apparatus is so arranged that any of it may be used for separate or combined tests, or for any original investigations. Besides the equipment in this room, the electric light and power plant, the heating plant of the College and barracks, the isolated plants at the dairy, horticultural grounds and pumping station are available for instructional purposes.

Physics

The physical lecture room and laboratory is situated in the main College building, is 33 by 60 feet, and is well equipped with apparatus for both the lecture and experimental work of a general course in physics.

Drawing and Designing

The drawing rooms occupy the entire third floor of the Mechanical Engineering building. The third and fourth floors of the tower are also used as a dark room and blue-print room respectively. A good selection of drawings and models

in these rooms are of great benefit to the student in his work. These rooms are equipped to accommodate from 20 to 36 students at a time, with cases, boards and T-squares for over 375. Members of all classes are required to furnish their own drawing instruments. All instruments used by students must be approved by the instructor in charge; an inferior grade of instruments will not be acceptable. Students are advised to buy their instruments at the Cadet Exchange, where samples can be seen and wholesale prices obtained.

Forge and Foundry

FORGE SHOP.—This is a room 37 by 60 feet, situated in a wing of the Mechanical building. It is equipped with 18 Buffalo down draft forges and steel-faced anvils, with sets of hammers, tongs, swages, fullers, flatters, etc. Continuous blast is furnished by a Buffalo blower driven by a 15 H. P. electric motor, the down draft being produced by a 60-inch Buffalo exhaust fan. The shop is also supplied with vises, swage blocks, emery wheel, bending cone, drill-press, bolt shear, etc.

FOUNDRY.—This building occupies a space 43 by 76 feet and is free from posts or other obstructions. It is equipped with a 26-inch Victor Collian cupola, a Millett's core oven, a two-ton post crane, 8 improved molder's benches, an 18-inch brass furnace, with its usual complement of crucibles, tongs, etc., full set of molder's tools for the accommodation of 20 students, besides the usual accessories to the foundry, such as ladles, flasks, etc.

Machine Shop

The machine shop is located in the southwest wing of the Mechanical building, which wing is 45 by 100 feet, well lighted, heated and ventilated.

It contains seventeen benches, with vises, 105 kits of tools and the following machine tools; 1 18-in.x12-foot engine lathe; 1 18-in.x8-foot engine lathe; 3 14-in.x6-foot engine lathes; 4 14-in.x6-foot Lodge & Shipley lathes; 2 14-in.x6-foot F. E. Reed compound rest engine lathes; 2 14-in.x6-foot Hendey compound rest engine lathes; 1 10-in.x4-foot F. E. Reed pattern maker's lathe; 1 15-in.x8-foot speed lathe; 1 18-in. drill press; 1 28-in. back geared drill press; 1 22-in.x6-foot Powell planer; 1 Cincinnati cutter and tool grinder; 1 15-in. Gould and Eberhardt crank shaper; 1 dry emery grinder; 1 12-in. power hack saw; 1 36-in. grind-stone; 1 22-in. Leland and Faulconer wet emery tool grinder; 1 American twist drill grinder; 1 10-in. slotting machine, built by New Haven Mfg. Co.; 1 fan; 1 forge. The tool room in connection with the shop contains all tools, etc., necessary for use with the machines.

The 7 H. P. motor which drives the machinery was built by students.

Woodwork

The wood shop occupies the two-story wing on the east side of the Mechanical Engineering building, 45 by 100 feet. The lower floor contains the freshman class room, equipped with fifteen work benches and sets of tools, six turning lathes, with tools for each, and other tools for hand work. On this floor is also the planing mill machinery, consisting of a double roll planer, power rip and cut-off saws, band saw, scroll saw, 16-inch jointer, moulding machine, mortising machine, tenoning machine, emery grinder, lathe with 12-foot bed, etc.

The upper floor is devoted to the work for the sophomore class, and is fitted up with fifteen work-benches and ninety sets of tools—one set for each student; six 10-in. turning lathes, large pattern lathe, combination saw and boring machine, double head shaper, panelling machine, carving ma-

chine, jig-saw, universal trimming machine, special door and sash clamps, steam glue pots, miter cutters, etc. The power is supplied by electric motors conveniently located in the various rooms. A large lumber yard and dry-kiln provide seasoned lumber at all times.

Chemical Department

The original Chemical Laboratory is a two-story brick building, 50 by 80 feet, covered with slate and finished inside with southern pine. Overlapping this at one corner, and connected with it by a glass-enclosed passage, is a new and somewhat similar building, 53 by 86 feet, of modern style and handsome design. This double building, which is well ventilated, heated by steam, and lighted by electricity, constitutes a commodious structure adequate to all the needs of the department.

On the first floor of the old building, which is used for academic work, there are five rooms. Two of these, connecting with each other, are employed as a laboratory for the agricultural seniors. Of the other rooms on this floor, one is a laboratory for post-graduate students and one a balance room, while the third is reserved for such use as the ever increasing demands upon the department may require.

On the second floor of this building, there are two large laboratories, one for the juniors in analytical chemistry, the other for the sophomores in general chemistry. A third and smaller room is used as a balance room.

The junior laboratory will accommodate seventy-two students, thirty-six at a time; the sophomore laboratory, one hundred and twenty students, sixty at a time. The laboratories are all provided with hoods for carrying off noxious gases, convenient working tables, water, gas, electric lights, and all necessary appliances for experimental work.

The basement of the building is used for assaying, for the preparation of distilled water and for storage. The air pump and the mixer of the gas machine for supplying the laboratories with gas are placed in this basement and connected with the generator, which is buried eighty-five feet from the building.

On the first floor of the new building there are nine rooms, all of which are appropriated to the chemical work of the State and of the Experiment Station. On one side of the wide hall, which extends the entire length of the building, are the rooms for the analysis of fertilizers. Three of these rooms are used respectively for the determination of phosphoric acid, nitrogen and potash; the fourth as a balance room; the fifth and last as a sample room. On the other side of the hall there are four rooms. The largest of these is used for the agricultural analysis of the Experiment Station. Adjoining this is a balance room, in which provision is made also for the optical and electrolytic apparatus. Of the remaining rooms, one is used for water analysis, the other as an office.

On the second floor of this building there are seven rooms; a lecture room, and six smaller rooms which are used for recitations, cabinets, apparatus, chemicals, library and professor's laboratory.

The lecture room will seat one hundred and seventy students, the seats being arranged in tiers.

The hoods in this building are all connected by earthenware pipes with a tightly-built room just under the roof, over which there is a large ventilator.

The rooms in the basement are used for assaying ores, for the preparation of agricultural products for analysis, and for storage. An electric motor located in one of these rooms supplies the power which drives the machinery for grinding and pulping samples of vegetable substances.



CHEMICAL BUILDINGS

Department of Textile Industry

The building is a brick structure of modern cotton mill design, 168 by 75. It is of the slow burning type, built according to fire insurance regulations, after plans of an experienced mill engineer. The building, although designed for educational and experimental purposes, containing offices, lecture rooms and laboratories, retains the more prominent features of a typical southern cotton mill. This affords the students an opportunity of gaining many points of valuable information in connection with mill construction, along with the manipulation of cotton fibres and the study of cotton mill processes and operations.

The first floor is occupied by the carding and spinning machinery, a lecture room, the main office, an exhibit room and the departmental library. The machinery on this floor is driven by two electric motors, one a 22 K. W. 220 volt direct current Westinghouse motor, driving the carding machinery, and a 15 K. W. 220 volt direct current General Electric Co. motor, driving the spinning machinery.

The second floor is occupied by the experimental dyeing laboratory, hand looms, power looms, a lecture room and two offices. The power machinery on this floor is driven by a 15 K. W. 220 volt direct current General Electric Co. motor.

The basement, which is situated under the right hand half of building, is occupied by the dye-house, and is nicely equipped for that purpose.

The building is equipped with a system of "Vortex" humidifiers from the American Moistening Co.; steam heating system and automatic fire sprinklers from The D. A. Tompkins Company; shafting, pulleys and hangers, from Jones and Laughlin, Ltd., and from T. B. Wood's Sons.

Carding Division

Pickers—One Atherton automatic feeder; one Atherton breaker; one Atherton finisher lapper, with evener motion.

Cards—One Saco & Pettee 40-in. revolving top flat card; one Mason 40-in. revolving top flat card; two traverse wheel grinders; two drum traverse grinders; stripping and burnishing rolls; two complete sets of carder's tools.

Combing—One Mason sliver lap machine; one Mason ribbon lap machine; one Mason six-head combing machine.

Railway Heads—One Saco & Pattee railway head, with evener motion, stop motions, and metallic rolls; one Mason railway head, with evener motion, stop motions, and metallic rolls.

Drawing—One Saco & Pettee drawing frame, 4 deliveries, stop motions, and metallic rolls; one Mason drawing frame, 4 deliveries, stop motions, and metallic rolls.

Fly Frames—One Saco & Pettee 12-in.x6-in. 40 spindle slubber, with latest differential motion; one Saco & Pettee 8-in.x4-in. 60 spindle intermediate roving frame, with latest differential motion; one Saco & Pettee 7-in.x3 1-2-in. 80 spindle fine roving frame, with latest differential motion; one Woonsocket 6-in.x2 1-2-in., 96 spindle jack roving frame, with Daly's improved differential motion.

Spinning Division

Ring Spinning—One Saco & Pettee combination warp and filling ring spinning frame, 128 spindles; one Mason combination warp and filling ring spinning frame, 112 spindles; two Falcs & Jenks combination warp and filling ring spinning frames, 80 spindles each, designed for spinning fine counts; two Whitin combination warp and filling ring spinning frames, 80 spindles each.

Mule Spinning—One Mason self-acting spinning mule, 120 spindles, 1 3-4-in. gauge, with all latest improvements.

Spooling—One Draper spooler, 40 spindles; one Saco & Pettee spooler, 72 spindles; one Barber & Coleman knotter.

Twisting—One Draper combination wet and dry twister, 48 spindles; two Fales & Jenks wet twisters, combination filling and taper top wind, 70 spindles each.

Winding—One W. W. Altemus & Son bobbin winder; one Atwood-Morrison Co. bobbin winder; one Geo. W. Payne & Co. skein winder; one Universal cone and tube winder.

Reeling—One D. A. Tompkins Co. adjustable reel, 50 spindles.

Warping—One Draper section warper; one Draper ball warper.

Beaming—One Entwistle beaming machine.

The divisions of carding and spinning are equipped with all necessary supplies, such as doff boxes, roving cans, bobbins, spool, cops, cones, tubes and change gears for all machines.

Weaving Division

Hand Looms—Seventeen hand looms, with 4x4 box motion, and 30 harness shedding engines, arranged for four beam work.

Power Looms—One 40-in. Northrop cam loom, with warp stop motion and automatic filling magazine; one 28-in. Northrop cam loom, with warp stop motion and automatic filling magazine, also fitted with Stafford 20 harness dobby; one Mason 36-in. gingham loom, with 4x1 box motion; one Mason 40-in. loom, with Stafford 20 harness dobby, also arranged for center selvage motion; one Mason 44-in. fancy cotton loom, with 24 harness dobby; one Stafford 30-in. fancy cotton loom, with 20 harness dobby and leno attachment; one Stafford 30-in. dress goods loom, with Stafford 400 hook, single lift, swing cylinder, jacquard; one Knowles 40-in. "Gem" loom, with 30 harness dobby, 4x4 box motion; one

Crompton & Knowles 36-in. fancy cotton towel loom; one Crompton 65-in. loom, 4x1 drop box motion, fitted with 624 hook double lift, swing cylinder, jacquard, tied for weaving table damask; one Whitin 40-in. cam loom, arranged to weave up to 6 harness; one Whitin 40-in. fancy cotton loom, fitted with 20 harness dobby; one Whitin heavy pattern duck loom; one Knowles 30-in. fancy cotton loom, 2x2 box motion, 16 harness dobby; one Kilburn & Lincoln 40-in. loom, 4x1 box motion, arranged for dobby; one Kilburn & Lincoln 40-in. loom, 2x2 box motion, arranged for dobby.

Dressing—One Davis & Furber dresser, complete.

Jacquard card cutting—One Jno. Royle, French index, foot power card cutter.

This division is also equipped with one floor stand, fitted with 8 harness dobby and leno attachment, built specially for illustrating leno weaves; one jacquard tying-up frame; warping pegs; beaming frames; drawing-in frames; extra heddles and heddle frames; reeds; change gears, etc.

Division of Textile Chemistry and Dyeing

The work in textile chemistry and dyeing is carried on in an experimental laboratory and a practical dye-house. These are equipped with the necessary apparatus and chemicals for instruction in organic chemistry, scouring, bleaching, dyeing, mercerizing, printing, etc.

The experimental laboratory is fitted with appropriate work-tables furnishing accommodations for sixty-four students working by detachments. Each table is supplied with the necessary arrangements for gas and water, and drawers and lockers in which may be stored apparatus and unfinished experiments.

Dye-house—Nine dye vats, four fitted with copper heating coils, one for peroxide bleaching; one Schaum & Uhlinger self-balancing hydro-extractor; one steaming and ageing

box ; one mercerizing apparatus for yarn ; one calico printing machine ; one 20 gal. copper kettle ; one set copper measures ; one dry closet. There is also an equipment of reels, yarn testers, analytical balances, etc., and necessary instruments for experimental purposes.

Departmental Library

For the use of students and instructors, a reading room in the textile building has been fitted up and is furnished with some of the more important books of reference relating to the textile industry, and also with the leading periodicals relating to the subject. All journals and periodicals are contributed. The room is open every week day throughout the session.

Civil Engineering

The collection of field instruments contains the following : Engineer's transit, with stadia and solar attachment ; surveyor's compass, 2 twenty-inch wye levels, railroad compass, 2 six-inch vernier compasses ; plane table with nine-inch telescope, vertical circle and stadia ; drainage level, current meter with electric recorders, sextant, anervoid barometer, 2 twelve-foot self-reading leveling and stadia rods, twelve-foot New York leveling rod, twelve-foot Boston leveling rod, cross-section rod with clinometer, two surveyor's chains, engineer's chains, 2 standard 100-foot steel tapes, sixty-six foot steel tape, fifty-foot steel tape, and a full supply of ranging poles, flag poles and other accessories.

The office equipment includes planimeter, slide rules, and drafting instruments and appliances. In addition to the drawing done under the immediate direction of the instructor in civil engineering, the regular work in drawing and designing provided for students pursuing this course, is arranged with special view to their needs. The engineering laboratory and the shops and drawing rooms in which the civil engineer-

ing students receive an important part of their instruction, are described under the equipment of the mechanical and electrical department.

Library*

In the main building is a series of rooms specially constructed for the use of the library. There are now upon the shelves 6,300 volumes, classified under the various heads of literature, history, biography, science, and reference books. In addition to these in the general library, there are 1,493 volumes in Experiment Station and department libraries of the College. There are also about 2,300 government publications, together with about 3,000 pamphlets. The library is supported by an annual appropriation, and the number of books is added to each year.

In connection with the library there is a reading room in which the students have access to nineteen of the leading weekly and monthly periodicals, twelve technical journals, the principal daily papers of the state and many of the county papers.

The Clemson Relics

A collection of thirty-seven oil paintings, collected by Mr. Clemson, chiefly in Holland, together with a number of additional portraits, may be seen in the President's office in the Main building.

The Calhoun Relics

Several pieces of furniture and other interesting relics, formerly the property of Mr. Calhoun, are carefully preserved in the Calhoun Mansion, where they may be seen by visitors to the College.

*See donation to library, page 140

DEPARTMENTS OF THE COLLEGE
DETAILED DESCRIPTIONS OF COURSES

Departments of the College

For administrative purposes, the College is divided into seven departments, each presided over by a director, who has general supervision of all the work and interests of his department. The departments comprise the various divisions indicated below, which are in the immediate charge of the professors, associate and assistant professors, and instructors of the respective departments.

Numbers in parentheses refer to descriptions beginning on page 85.

1. Agricultural Department

Agriculture (100-104).

Geology and Mineralogy (110-117).

Horticulture (120-122).

Veterinary Science (130-139).

Zoology and Entomology (140-142).

Dairying and Animal Husbandry (150-162).

Botany and Bacteriology (170-175).

2. Mechanical and Electrical Department

Electrical Engineering (200-203).

Mechanical Engineering (210-215).

Physics (220-222).

Drawing and Designing (230-239).

Forge and Foundry (240-241).

Machine Shop (250-251).

Woodwork (260-262).

3. Chemical Department

Chemistry (300-306).

Metallurgy (310, 311).

4. Textile Department

Carding and Spinning (400-409).

Weaving and Designing (410-414).

Textile Chemistry and Dyeing (420, 421).

5. Academic Department

English (500-504).

History and Political Economy (510-515).

Mathematics and Civil Engineering (520-537).

6. Military Department

Military Science and Tactics (600-602).

7. Preparatory Department



AGRICULTURAL HALL

Detailed Descriptions of Courses

Agricultural Department

Professor Newman, Director

General Agriculture

Professor Newman

Assistant Professor Benton

100. Foundations of Agriculture

FRESHMAN CLASS; COURSES I., II.

A preliminary and general practical survey of the geological and physiographical principles upon which agriculture is based, given by the division of geology and mineralogy.

A preliminary and general practical survey of the zoological principles upon which agriculture is based, given by the division of zoology and entomology.

A preliminary and general practical survey of the botanical principles upon which agriculture is based, given by the division of botany and bacteriology.

101. Soil Management and Farm Crops

SOPHOMORE CLASS; COURSES I., II.

As the student progresses in the study of the natural sciences, the application of these sciences is taught in their relation to the art of agriculture, special stress being placed upon the protection, improvement, fertilization, and all manipulations of the soil in the preparation for planting and in the cultivation of crops.

102. Rural Economy and Sociology

JUNIOR CLASS ; COURSE I.

Lectures upon the employment and management of labor, farm equipment, and farm management. The lectures include the interrelations of economics and agriculture, and the social status and problems of the rural community.

103. Soil Physics

JUNIOR CLASS ; COURSE I.

The work in soil physics enables the student to understand the effects of the different methods of treatment of soils, and the influence of these methods upon moisture, texture, aeration, fertility and production. The course is supplemented by laboratory determinations of specific gravity, relative specific gravity, water-holding capacity, capillary power, and rate of percolation of various soils; experiments upon rates of evaporation from the surface, and the effects of different mulches and methods of cultivation upon retention of soil moisture; mechanical analysis of soils.

104. Agricultural Research and Literature

SENIOR CLASS ; COURSE I.

The senior class will study the results of experiment work, conduct experiments, interpret results, and prepare them in bulletin form. Research in agricultural reports and kindred literature will be required upon assigned subjects, the results to be reported in writing.

The Agricultural Society

Attendance upon the meetings of the College Agricultural Society will be required of all students in the agricultural courses.

Geology and Mineralogy

Professor Calhoun

110. Elementary Mineralogy

JUNIOR CLASS ; COURSE V.

Laboratory study of crystal forms by the use of models and natural crystals; chemical and physical properties of minerals; practice in the

determination of unknown specimens. This is a brief course, intended to give the student an adequate conception of the science of mineralogy together with some practical acquaintance with the more common and important minerals.

111. Mineralogy

JUNIOR CLASS; COURSE III.

A comprehensive course in crystallography, physical and chemical mineralogy, and systematic descriptive and determinative mineralogy. Crystallography is taught by lectures and text-book, with laboratory work on the collections of models and natural crystals; also physical, optical, and chemical properties of minerals, and descriptive mineralogy, covering the more important mineral species. Much of the laboratory work is devoted to the determination of minerals by means of their physical and chemical properties, by comparison with labeled specimens of the systematic collection, and by the use of unlabeled collections for practise in identifying minerals at sight. This course gives a sufficient knowledge of mineralogy for the geologist, metallurgist, mining engineer, or chemist, and will enable the student to readily identify all but the rarer minerals.

112. Elementary Geology

SENIOR CLASS; COURSES I., II., IV., V.

The elements of dynamical, structural and historical geology. The influences of geologic phenomena on man are emphasized, particularly in the study of rock-decomposition and the formation of soils, the processes of erosion and deposition, and the resultant topographic forms.

113. General Geology

JUNIOR CLASS; COURSE III.

A broad course in the elements of general geology. Special stress is laid on structural and dynamical geology in their relations to the formation of rocks and rock-structures, the metamorphism of rocks, and the deposition of minerals and ores. In historical geology special attention is given to the development of the North American continent.

114. Petrography

SENIOR CLASS ; COURSE III.

A study of the structure, composition, origin, and classification of various families of rocks, their distribution, modes of occurrence, and geological importance; microscopic characters of rock-forming minerals, and the use of the petrographic microscope. The course is supplemented by work in the field and laboratory, and the student becomes familiar with rocks and with practical methods of investigation, and their applications to the problems of lithological geology.

115. Economic Geology

SENIOR CLASS ; COURSE III.

A general survey of geological products of value, including metallic and non-metallic minerals, and building stones; their origin and nature, distribution, modes of occurrence, and methods of exploitation. The course deals particularly with the economic deposits of North America, with briefer reference to those of other countries for purposes of comparison and for the elucidation of problems of origin, exploitation, etc. The student is required to read and prepare abstracts of the more important monographs and reports.

116. Practical Geology

SENIOR CLASS ; COURSE III.

Field study and reports of geological processes and phenomena, rocks and rock structures, both original and secondary, accompanied by laboratory exercises by means of specimens, models, photographs, maps and sections; interpretation and representation of geologic phenomena, and training in the principles and methods of geological surveying, the construction of geological maps and sections, and the preparation of reports.

For descriptions of equipment, see page 63.

117. Agriculture

SENIOR CLASS ; COURSE I.

A general course on the soil-making minerals and rocks. Special emphasis will be laid upon the relation of soils to plants. The origin of soils will also be studied.

Horticulture

Associate Professor Newman

Instruction is given in the sophomore, junior and senior classes. The theoretical work is illustrated by practical exercises in the garden, orchard, vineyard, greenhouse, and ornamental grounds of the College. These practical exercises enable the student to become familiar with all the details of the work.

120. Propagation and Management of Nursery Stock

SOPHOMORE CLASS; COURSE I. JUNIOR CLASS; COURSE II.

Lectures are given on the following subjects and special attention is paid to the practical work along these lines. Stratification of seeds; sowing seeds; seed testing; separation and division; budding and grafting; grading and storing nursery stock; nursery management.

121. Vegetable Gardening

JUNIOR CLASS; COURSES I., II.

Construction of hot-beds and cold-frames, their use and management; preparation of the soil; fertilizing; seed sowing; transplanting and cultivation; gathering; storing and marketing; spraying and spraying equipment.

Text-book: Principles of Vegetable Gardening, by L. H. Bailey.

122. Ornamental Horticulture and Floriculture

SENIOR CLASS; COURSE I.

The work includes ornamental horticulture and floriculture; the propagation and care of ornamental plants; general greenhouse work and management.

For descriptions of buildings, grounds, and equipment, see pages 58 and 59.

Veterinary Science

Associate Professor Klein

Assistant Hanvey

Anatomy and Histology

SOPHOMORE CLASS; COURSE II.

A laboratory course in gross and microscopic anatomy, arranged as an introduction to the study of the principles of stock judging and physiology.

Reference book: Compend of Equine Anatomy, by Wm. R. Ballou.

131. The Horse

SOPHOMORE CLASS; COURSES I., II.

Practical study of the breeds and types of horses and mules, including principles of breeding; management; judging by score card; examination for soundness; breaking; biting; saddling; gaiting and harnessing.

132. Veterinary Physiology

JUNIOR CLASS; COURSE II.

While this course embraces the study of all the animal functions, especial attention is given to digestion, nutrition, reproduction, milk secretion, and locomotion, these being of greatest importance in the animal industries.

Text-book: A Manual of Veterinary Physiology, by F. Smith.

133. Surgical Therapeutics

JUNIOR CLASS; COURSE II.

In this course hemorrhages, inflammation, wounds, sprains, bruises and other accidental conditions are considered, together with the use of antiseptics, and the treatment of diseases of the hoofs.

134. Physiological Demonstrations and Microscopy

JUNIOR CLASS; COURSE II.

A laboratory course in which some of the vital functions are demonstrated and the secretions and excretions studied microscopically.

135. Pathology and Pharmacy

JUNIOR CLASS; COURSE II.

136. Sporadic Animal Diseases

SENIOR CLASS; COURSE II.

137. Contagious Animal Diseases

SENIOR CLASS; COURSE II.

138. Hygiene and Sanitary Science

SENIOR CLASS; COURSE II.

Text-book: A Manual of Veterinary Hygiene, by F. Smith.**139. Veterinary Clinics**

SENIOR CLASS; COURSE II.

A free clinic is held at the veterinary hospital every Monday afternoon of the session, except on holidays and during examinations. These clinics are liberally patronized by the stockmen of the surrounding country, and the material thus secured affords practical work in surgery and the treatment of diseases. Many patients are kept in the hospital for treatment.

For descriptions of buildings and equipment, see pages 59 and 64.

Zoology and Entomology*Associate Professor Chambliss*

The instruction in this division is largely conducted by the laboratory method with lectures and recitations, and is so given as to lead the student to observe and think for himself, as well as to secure a working knowledge of the science for practical purposes.

140. Physiology

SOPHOMORE CLASS; COURSES I., II.

An elementary course in which the physiology of digestion, circulation and excretion will receive special attention. The instruction will serve as a basis for hygiene and as an aid to those who may teach in public schools.

141. General Invertebrate Zoology

JUNIOR CLASS; COURSES I., II.

This course includes a general discussion of groups, and dissection of types, especially of the forms related to insects, and is further extended to lay a foundation for a knowledge of animal development. Animals of economic importance are given special attention.

Books of Reference: Invertebrate Morphology, by McMurrich; The Riverside Natural History; Text-book of Zoology, by Parker and Howell.

142. Economic Entomology

SENIOR CLASS; COURSES I., II.

By laboratory studies and field work, the students in this course will be made familiar with the most important injurious insects. For the systematic and biological work, a collection of one hundred species, with full notes on the habits of twenty-five, will be required. The practical work will consist of the preparation and application of insecticides.

Text-book: Manual for the Study of Insects, by Comstock; Elements of Insect Anatomy, by Comstock and Kellogg.

Books of Reference: Insects Injurious to Fruits, by Saunders; Economic Entomology, by Smith; Guide to Study of Insects, and a Text-book of Entomology, by Packard; U. S. Government Experiment Station and State publications on Entomology.

For description of equipment, see page 65.

Animal Husbandry and Dairying

Associate Professor John Michels

Instructor Burgess

150. Types of Cattle

FRESHMAN CLASS; COURSES I., II.

Market and breed types of dairy and beef cattle; their origin and history.

152. Types of Sheep and Hogs

SOPHOMORE CLASS; COURSE II.

Breed and market types of sheep and hogs; their origin and history.

153. Principles of Breeding

SOPHOMORE CLASS; COURSE II.

Principles of breeding, including selection; heredity; atavism; variation; fecundity; methods of breeding; in-and-in breeding; line-breeding, etc.

154. Stock Judging

SOPHOMORE CLASS; COURSE II.

Judging dairy and beef cattle, sheep and hogs, and score card practice.

155. Care and Management of Live Stock

JUNIOR CLASS; COURSE II.

Care and management, housing and feeding live stock.

156. Stock Feeding (short course)

SENIOR CLASS; COURSE I.

Stock feeding, including the consideration of the comparative food value and cost of all southern feeding stuffs; economic methods of feeding to produce milk, beef, etc.; and method of feeding work animals.

157. 158. Stock Feeding

SENIOR CLASS; COURSE II.

Stock feeding, including composition and digestibility of feeding stuffs; their preparation, use and cost; nutritive ratios; digestion, etc. The available feed stuffs of the south are discussed at length.

159. Group Judging

SENIOR CLASS ; COURSE II.

Judging groups of animals similar to county and state fair work.

160. Pedigree Work and Compounding Rations

SENIOR CLASS ; COURSE II.

161. Milk and Its Products

JUNIOR CLASS ; COURSES I., II.

It is the object of this course to give the student a thorough knowledge of the sanitary conditions necessary to produce and handle milk; pasteurization; milk testing; dairy machinery; manufacture of butter, cheese and ice cream, and marketing.

162. Practical Work in Creamery

JUNIOR CLASS ; COURSES I., II.

Cream separation and ripening; pasteurization of milk and cream; bottling milk; butter and cheese making; milk testing; butter and cheese scoring.

For description of buildings and equipment, see pages 59 and 65.

Botany and Bacteriology*Associate Professor Metcalf***171. General Botany**

SOPHOMORE AND JUNIOR CLASSES ; COURSE I.

The flowering plants are first studied and especial attention given to plant physiology; afterward a rapid survey of the whole plant kingdom is made by a study of types. Considerable attention is given to acquiring the ability to name plants, especially those of economic importance. While the work is necessarily very general, it serves to show the bearing of the results of modern botanical research on the problems underlying the cultivation of plants.

172. Elements of Forestry

SENIOR CLASS ; COURSE I.

173. General Bacteriology

SENIOR CLASS ; COURSES I., II.

The nature and distribution of bacteria, the facts underlying the phenomena of decay and disease, the hygiene of contagious diseases, the elaborate technique of practical work in the science, form the subject matter of the course.

174. Plant Pathology

SENIOR CLASS ; COURSE I.

The course is devoted to the study of the diseases of economic plants. The class first studies pear blight as a typical disease, producing the disease by inoculation and watching its progress and effects. Other diseases induced by plant parasites are then studied from the systematic standpoint of the parasite. The students are taught to recognize the more common diseases, particularly in the early stages; and the whole question of prevention and practicable remedies is fully discussed.

175. Bacterial Diseases of Animals

SENIOR CLASS ; COURSE II.

A study of animal diseases corresponding to No. 174 above, with the detailed study of anthrax as a type disease.

For descriptions of equipment, see page 65.

Mechanical and Electrical Department

Professor Riggs, Director

Electrical Engineering

Professor Riggs

*Assistant Professor Dargan**

200. Electricity and Magnetism

JUNIOR CLASS; COURSE IV.

Study of the principles of electricity and magnetism, and the elementary design of electro-magnetic mechanism. Wiring calculations, incandescent lighting, etc.

Text-books: Elementary Lessons in Electricity and Magnetism, by Thompson; Elementary Electricity and Magnetism, by Jackson.

201. Electrical Laboratory Practice

JUNIOR CLASS; COURSE IV.

Experimental verification of fundamental electrical laws; measurement of currents, electromotive force, resistance, permeability, capacity, etc.

Reference books: Ayrton's Practical Electricity; Nichol's Physics, Vol. I.; Stewart and Gee's Practical Physics; Henderson's Practical Electricity and Magnetism, Vols. I. and II.

202. Dynamo Electric Machinery

SENIOR CLASS; COURSE IV.

First half session: study and design of direct current dynamo-electric machinery. Second half session: study of alternating currents and their application to light and power. Special attention is directed to polyphase systems and apparatus.

*In place of Prof. Kyser, absent on leave for year 1904-1905.



MECHANICAL AND ELECTRICAL BUILDINGS

Text-books: Thompson's Dynamo-Electric Machinery; Franklin's Alternating Currents and Alternating Current Machinery; Sheldon's Alternating Current Machines.

NOTE.—A complete dynamo design, with full set of drawings, is required as part of course 202 in Electrical Engineering, and course 238 in Mechanical Drawing.

203. Electrical Laboratory

SENIOR CLASS; COURSE IV.

Care, management and testing of arc and incandescent generators, direct current arc lamps, motors, etc. During third term management and test of single and polyphase machinery and apparatus.

For descriptions of buildings and equipment, see pages 60 and 66.

Mechanical Engineering

Associate Professor Earle

Assistant Professor Wright

In this course the student is taught the application of his scientific, mathematical and technical knowledge to the design and construction of engineering structures, and of machinery and manufacturing plants in general.

210. Mechanism

JUNIOR CLASS; COURSES III., IV., V., VI.

Spur, bevel, and screw gearing, belt gearing; lobed and elliptic wheels; epicyclic trains; escapements; ratchet motions; link motions; quick return motions; cam motions.

Text-book: Stahl and Wood's Mechanism.

211. Mechanics

JUNIOR CLASS; COURSES III., IV., V., VI.

Motion, force, velocity, work, energy, power, stress, strain, elasticity, resilience, moments of force, centre of gravity, moments of inertia, momentum, hydrostatics.

Text-book: Maurer's Technical Mechanics.

212. Mechanics

SENIOR CLASS; COURSES IV., V.

Two hours per week during the first two terms are given to the study of pure mechanics, strength of engineering materials and hydraulics.

Text-book: Maurer's Technical Mechanics.

213. Mechanical Engineering

SENIOR CLASS; COURSES III., IV., V., VI.

Study of the design and construction of steam boilers, heaters, pumps and injectors; theory and design of simple, compound and triple expansion steam engines; gas and gasoline engines; hot air engines; air compressors and motors; ice and refrigerating machinery; heating and ventilating systems; transmission of power; engineering specifications and the law of contracts. Theory of the strength of engineering materials. Graphical solution of problems. Hydraulics,

Text-book: Ewing's Steam Engine and other Heat Engines.

214. Mechanical Laboratory

SENIOR CLASS; COURSES IV., V.

Study, use and calibration of water-meters, weirs, steam gages, indicators, dynamometers, calorimeters; efficiency tests of screw-jacks and hoists; tests of fuel and lubricants; tests of building materials, as iron, wood, brick, cement, etc.; erecting, lining up and setting the valves of the plain slide-valve and automatic cut-off steam engines; indicator practice; horse-power and efficiency of steam, gasoline and hot-air engines and air-compressors and motors; efficiency trials of steam boilers; duty trial of steam pump and of College pumping engines.

Reference books: Carpenter's Experimental Engineering; Smart's Engineering Laboratory Practice; Thurston's Steam Engine.

215. Mechanical Laboratory

SENIOR CLASS; COURSES III., VI.

Study, use, and calibration of steam gages; indicators; calorimeters; tests of building materials, as iron, wood, brick, cement; erecting, lining up and setting the valves of plain slide-valve and automatic

cut-off engines. Practice in running and testing water motors; steam engines; gasoline engines; pumps; firing and testing of steam boilers.

Reference books: Carpenter's Experimental Engineering; Smart's Engineering Laboratory Practice; Thurston's Steam Engine.

For descriptions of equipment, see page 69.

Physics

Associate Professor Poats

The study of physics is begun in the sophomore year by all regular students, and completed in that year by those students taking courses in agriculture and textile industry. All other regular students take physics, both theoretical and practical, in the junior year.

The instruction is by lectures and recitations, special stress being laid upon those principles and facts which are fundamental to the several engineering professions. The lectures and recitations are illustrated by numerous experiments before the class.

In the physical laboratory the student is taught to perform for himself all the experiments of a general laboratory course. The properties of matter, the laws of mechanics, heat, electricity, magnetism, light and sound are verified. Students are required to make accurate and neatly written reports of all experiments.

220. Elementary Physics

SOPHOMORE CLASS; ALL COURSES.

Properties of matter; physical measurements; mechanics of solids and fluids; electricity and magnetism.

Text-book: Carhart and Chute's Physics.

221. Electricity and Magnetism, Heat, Sound and Light

JUNIOR CLASS; COURSES III., IV., V.

Text-books: Carhart and Chute's Physics; Carhart's University Physics.

222. Physical Laboratory

JUNIOR CLASS; COURSES III., IV., V.

Experimental determination of the physical properties of matter and the verification of laws of mechanics; heat; sound; light; electricity and magnetism.

For description of equipment, see page 70.

Drawing and Designing

Associate Professor Lee

Assistant Professor Klugh

Instructor Gantt

Throughout the course the best methods of work pursued in the drawing rooms of workshops and manufacturing establishments are given.

230. Freehand Drawing

FRESHMAN CLASS; COURSES III., IV., V., VI.

Graded exercises in sketching from geometrical models, plaster casts, machine parts, and other objects in pencil and ink, particular attention being paid to outlines and perspective.

231. Freehand Drawing

FRESHMAN CLASS; COURSES I., II.

Same as course 230, except that botanical and entomological specimens are substituted for machine parts.

232. Mechanical Drawing

FRESHMAN CLASS; COURSES III., IV., V., VI.

Exercises in the use of drawing instruments; lettering; geometrical problems; projections; conventional section and shade lines; working drawings of simple parts of machines, from sketches and models.

233. Mechanical Drawing

FRESHMAN CLASS; COURSES I., II.

Exercises in the use of drawing instruments; lettering; geometrical problems; projections; plans and elevations of farm buildings.

234. Mechanical Drawing

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Orthographic projection; intersection and development of surfaces; isometric drawing; perspective; shades and shadows; working drawings of machines or parts of machines from sketches and specifications. Elementary principles of machine design; construction of screw threads; proportioning of bolts and nuts,

235. Mechanical Drawing

JUNIOR CLASS; COURSE IV.

Practical problems in mechanism. Elementary principles of design, continued; riveting; coupling; belt gearing; gear teeth, etc.; tinting; tracing and blue printing.

236. Mechanical Drawing

JUNIOR CLASS; COURSE V.

Plotting; topographical drawing; tinting; railroad and map drawing; plans and details of buildings.

237. Mechanical Drawing

JUNIOR CLASS; COURSE III.

First half same as course 236. Second half, drawing of furnace designs and other metallurgical appliances.

238. Machine Design

SENIOR CLASS; COURSES IV., VI.

Toothed gearing, cams, and details of steam engine and electrical machinery. Design drawing required in graduation thesis.

239. Mechanical Drawing

SENIOR CLASS; COURSE V.

Railroad and map drawing; plans and details of bridges and buildings. Design drawing required in graduation thesis.

For description of equipment, see page 70.

Forge and Foundry

Assistant Professor Griswold

Assistant Howard

240. Forge Work

FRESHMAN CLASS; ALL COURSES.

Study of Buffalo down draft forges; graduated exercises, embracing fundamental operations of forging, such as upsetting, bending,

punching, twisting, welding, etc. Part of third term is devoted to working with tool steel, involving processes of annealing, hardening, tempering, etc.

241. Foundry Work

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Names and uses of molders tools; tempering and working of molding sand; making and patching of molds. Work with patterns of various shapes and sizes, illustrating the principles of venting, gating, coring, etc. Grading and mixing of iron; charging and operating cupola. Several weeks are devoted to work in brass molding. The practical instruction is supplemented by a course of lectures covering the various phases of foundry work.

For description of equipment, see page 71.

Machine Shops

Assistant Professor Wright

250. Machine Shop

JUNIOR CLASS; COURSES IV., V., VI.

Instruction begins at the bench with exercises in chipping, filing, scraping and polishing. Castings and drawings are given the student, and he is required to chip, file, scrape and polish each casting into the exact form and size represented by the corresponding drawing. From bench work the student is advanced to machine work, where he is taught turning, boring, polishing, drilling, threading, planing, milling, grinding, etc., in iron, brass and steel. In all cases the exercises are required to be worked to drawings. The graded course of exercises is designed to teach the fundamental principles and practices of machine metal-work from the simplest to the most difficult operations.

Only a few set exercises are given to teach important fundamental processes. It is the policy of the shop to keep several large machines in process of construction, requiring the students to do the work. Experience has taught that students take greater interest in making parts of a machine that is for actual use than in mere routine exercise work.

251. Machine Shop

SENIOR CLASS; COURSE IV.

The senior year is devoted to a more advanced work in the construction of engines, dynamos, motors and other machines. The student is encouraged to work from his own designs as far as possible, but is guided and directed by the instructor in charge.

For description of equipment, see page 71.

Woodwork

Assistant Professor Hook

Assistant Howard

The course in woodwork does not aim to make the student a skilled workman, but rather to teach the proper use of tools and impress the importance of working to exact dimensions. At the same time, it gives a certain amount of manual dexterity, useful in every vocation.

The course covers two years, beginning with the most elementary principles and advancing gradually by a series of graded exercises to the more complicated instructions where special methods and tools are required. All work is done from working drawings, and commercial shop methods are constantly employed.

260. Woodwork

FRESHMAN CLASS; COURSES III., IV., V., VI.

Use and care of tools; graded exercises in carpentry, joining, wood-turning; construction of articles from working drawings; use of turning lathe and other simple machinery; construction of boxes, desks, etc., involving dove-tailing, gluing, polishing, etc.

261. Woodwork

FRESHMAN CLASS; COURSES I., II.

Same as course 260, except that for wood-turning is substituted a study of farm structures, such as fences, gates, houses, etc.

262. Woodwork—Pattern Making

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Use of wood-working machinery, as plainer, jointer, moulder, mortice and tenoning machine, carving and paneling machine, shaper,

Department of Textile Industry

Professor Beaty, Director

Details of Instruction

In carding and spinning, after the subject of raw material has been completed, machinery and processes used in the production of cotton yarns will be taken up systematically, going into a detailed examination and explanation of the separate machines and the mechanisms peculiar to them. Calculations for making changes of gears, speeds, production, etc., and practical operation of each machine will be required.

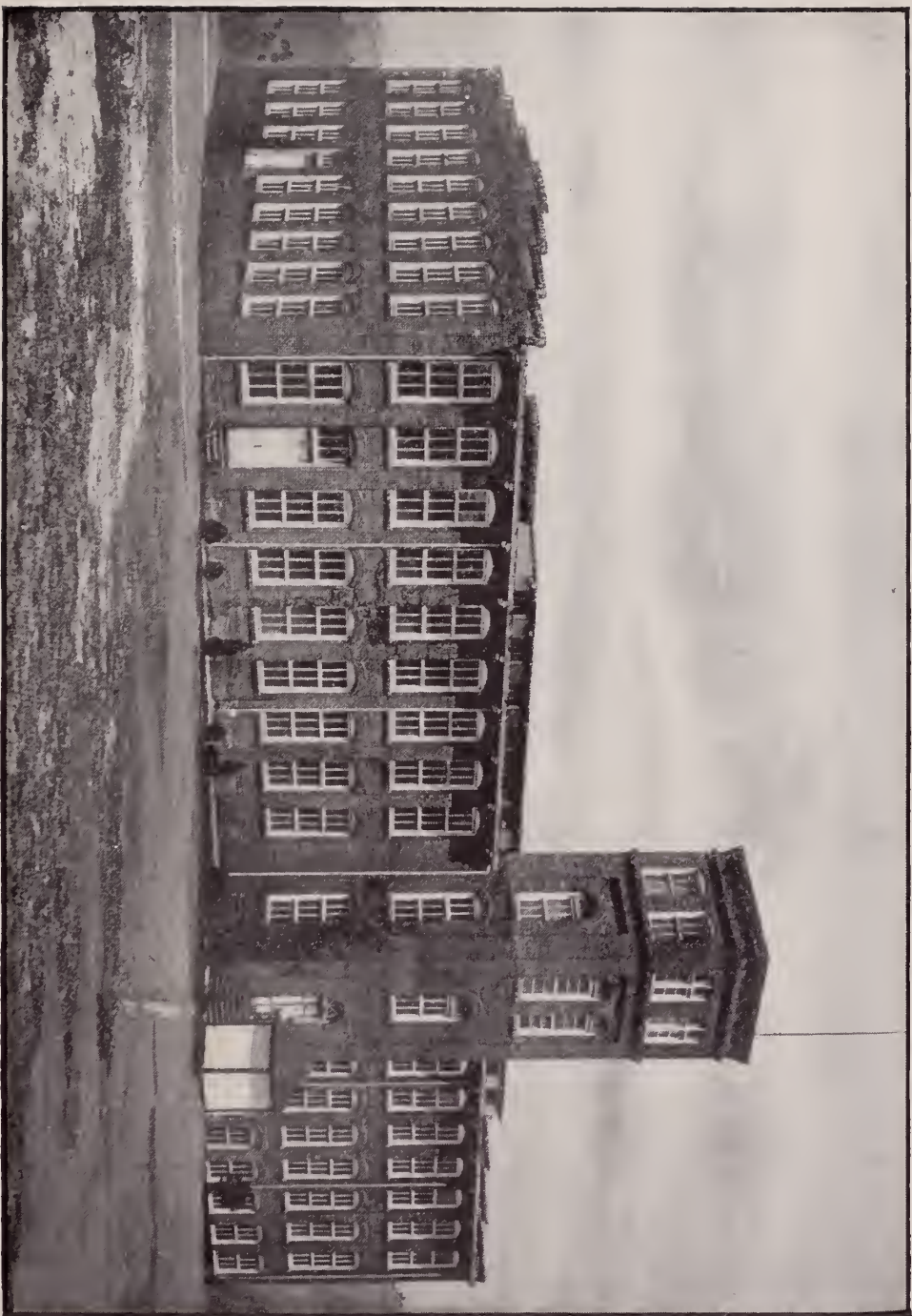
In designing, instruction begins with explanations of the principles of representing weaves on design paper, after which the designing of plain simple weaves, laying out of harness drafts, pegging plans, etc., are taken up, advancing into the designing of more complicated weaves usually made on harness. After the completion of harness weaves the time will be devoted to designing of Jacquard weaves and tying-up of Jacquards. The aim of the instruction in designing will be to develop originality in the student.

The practical work in weaving is laid out to parallel the instruction in designing. The first part of the instruction in this work will be on hand looms. After the completion of that amount of work required on hand looms, the student is advanced to plain and fancy power looms, where in addition to the practical operation of weaving, the loom will be analyzed and explained in detail, together with timing and setting all working parts. The latter part of this work will be on Jacquards.

Cloth analysis consists in dissecting samples of various kinds of cloth to ascertain the weave, texture, weight per yard and the counts of yarn used in its construction. The students are required to reproduce some of these patterns on the looms in the school.

The work in textile chemistry and dyeing covers inorganic quantitative analysis; the general principles of organic chemistry, with special reference to the coloring matters; the preparation of mordants and dyes, and the application of them to the several textile fibres.

Care is taken to develop accuracy in observation, neatness and clearness in written reports; and to this end each student is required to submit a comprehensive report—including the necessary notes and references from standard works on the subject—of every experi-



TEXTILE BUILDING

ment performed by him. By this method each student is able to verify for himself in the laboratory, the truth of the principle stated to him in the class room.

Each student will be required to submit an organization and a list of the machinery equipment, for several different sizes of mills, making different classes of products.

In all the divisions of this department, the lecture work, so far as is necessary, will be illustrated with drawings and lantern slides.

Carding and Spinning

Professor Beaty

Instructor Parker

400. Raw Material

JUNIOR CLASS; COURSE VI.

That the manipulation of cotton fibres may be carried out successfully, under various conditions, it is essential that the characteristics peculiar to the cotton fibre should be understood. Therefore, the introductory work of the students of this department is to examine the physical properties of cotton fibres, to ascertain their lengths of staple, spinning qualities, color, harshness and softness, and to determine their suitability for making various kinds of yarns, filling, warp, ply yarns, etc. This study of fibres will not be limited to American cottons, but will include the more important commercial cottons of the world. The effects of temperature and humidity on fibres will be fully discussed. Also the handling of cotton, prior to manufacturing processes, together with the injury to cotton fibres therefrom.

401. Opening and Mixing

JUNIOR CLASS; COURSE VI.

Beneficial effects of opening and airing cotton; length of time to air for best results; effects on resultant yarn if not properly opened; necessity of mixing; when to mix cottons and methods of carrying out same; effects of improper mixing; effects of a judicious mixing on the after processes of manufacture; reasons for blending; effects of blending cottons on the resultant yarn, for strength, appearance, cost, etc.; effects on finished products if cottons are not properly mixed or blended.

402. Picker Room

JUNIOR CLASS; COURSE VI.

Proper situation of picker room; arrangement of machinery in same; automatic feeder; purpose for which used; construction, adjustment of parts, etc.; action on cotton; manner of connecting them to breaker lappers with and without dust trunks; advantages of dust trunk; facilitating good results by proper care; breaker lapper, use, explanation of parts, beaters used, adjustment of working parts and experimenting with different speeds of beater; intermediate and finisher lappers, necessity of using same, construction, speeds, care of beaters, kinds of beaters, speeds of beaters for different lengths of staple; evener motion and its control of feed rolls; adjustment of grids to regulate amount of waste, disposition of waste; regulation of air current; effects of air current on proper working of the lapper; lap formation; calculation on above machines for drafts, length of lap, etc.

403. Carding

JUNIOR CLASS; COURSE VI.

Purpose of carding; principle upon which cards are built; comparison of types of cards; explanation of purpose and construction of feed plate, licker-in, cylinder, flats, screens, doffer, coiler head, etc.; different settings of card to produce best results on different lengths and qualities of fibre; regulation of waste; amount of draft; grinding; effects of improper grinding on card clothing and fibre; calculations for changing gears and speeds of various working parts.

404. Railway Heads and Drawing Frames

JUNIOR CLASS; COURSE VI.

Purpose, use, construction, advantages and disadvantages of railway heads; explanation of stop motions, evener; principle of drawing slivers; purpose of drawing frame; comparing work of leather covered and metallic rolls; adjustment of rolls; distribution of draft between the rolls; speeds, stop motions; all calculations on above machines, drafts, production, etc.

405. Fly Frames

SENIOR CLASS; COURSE VI.

Slubber, intermediate, fine roving and jack frames; construction, care and operation of the modern fly frame; bobbin and flyer lead machines; advantages of the bobbin lead; detailed explanation of working parts, differential motion, horse head, builder, full bobbin stop motion, etc.; adjustment of drawing rolls; calculations for draft, twist, lay, tension and other gears.

406. Yarn Manipulation

SENIOR CLASS; COURSE VI.

In this branch of work is included twisting; reeling; bundling; spooling; beaming. The slasher, construction and use; necessity for sizing; creels, cylinders, size boxes, etc.; mixing of size; different sizing ingredients for special purposes; method of preparing warps for the slasher; various calculations regarding each of the above processes.

407. Combing

SENIOR CLASS; COURSE VI.

Sliver lap machine, its construction, use, etc.; care and operation; leather covered rolls; metallic rolls; ribbon lap machine; its construction, use, etc.; advantages of using same; care and operation; lap formation; combing machine, its use, care and operation; detailed explanation of working parts, cylinder, half laps, segments, detaching rolls, etc.; with rules for adjusting and timing same; regulation of waste made; necessity of the process; relation of the process to fine smooth yarns; practical experience in adjusting above machines; calculation for change gears, etc.

408. Spinning Frames

SENIOR CLASS; COURSE VI.

Construction of the modern ring spinning frames; purpose of ring spinning; discussion of its principal parts; rings and ring holders; various types of spindles in use; speed of spindles; weights, sizes and speeds of travellers; warp, filling and combination builder mo-

tions; speeds and settings of rolls for different lengths of staple; effects of twist on the strength, color and elasticity of yarns; calculations for draft, twist, production and various constants.

409. Spinning Mules

SENIOR CLASS; COURSE VI.

Construction and operation of the self-acting spinning mule; special features; description of the head stock; cam shaft, copping rail, nosing motion, easing motion, jacking motion, twisting at the head, etc.; different movements in the mule and timing of the same; formation of a cop; characteristics and uses of mule spun yarn; calculations for draft, twist, builder gear, etc.

Text and Reference Books: Nasmith's Student Cotton Spinner; Tompkins' Cotton Mill Processes and Calculations; Taggart's Cotton Spinning; Monie's Sizing and Sizing Compounds.

For descriptions of equipment, see page 76.

Weaving and Designing

Associate Professor Frissell

410. Hand Loom Weaving

JUNIOR CLASS; COURSE VI.

The first practical work in weaving is on the hand loom. These hand looms have 4x4 box motion and 30 harness dobbies. After the design and necessary calculations have been made the student proceeds with dressing, drawing-in, reeding, tying the warp in loom, building harness chain and starting up loom; producing different weave effects from the same drawing-in draft by changing the harness chain; using box motions for color effects; combining two or more systems of filling with one system of warp, two or more systems of warp with one system of filling, two or more systems of warp with two or more systems of filling to produce figured fabrics of a special character; explanation of the different methods used in raising and lowering the harness.

411. Power Loom Weaving

JUNIOR AND SENIOR CLASSES; COURSE VI.

Power loom weaving will be taken up after the student has finished the required amount of hand loom work and will include a study of

the plain or cam loom; cam motions used for raising and lowering the harness, such as the under cam, side cam, etc.; setting cams; sketching cams to produce a given motion; arrangement of strapping for two, three, four and five harness; timing cams to suit the number of harness used; speed of different width looms on the same class of fabrics; selection of temples and measurements for same; Draper loom; warp stop motion, filling change mechanism, etc.; the dobby analysed and explained; methods of shedding; head motions; harness chains for single and double index dobbies; chains for head motions; explanation of box motions, four by one, four by four box, etc.; building box motion chains; explanation of multipliers used on box motions and harness motions; let-off motions, Morton, Bartlett, Shepard, and friction let-offs; open and closed shed machines explained; single and double index dobbies, etc.

412. Designing

JUNIOR AND SENIOR CLASSES; COURSE VI.

Purpose of designing; explanation of "warp" and "filling;" representing weaves on design paper; foundation weaves; plain or cotton weave; weaves derived from plain weaves, such as rib and basket weaves; twill weaves and methods of construction; derivative weave from twills, such as, broken, steep, skip, reclining and curved twills; corkscrew twills, entwining twills; satin weave and the purpose of same; weaves derived from satins; such as double satins and granites; shading of satins; figured effects produced by using warp and filling satins; color effects produced by using two or more colors in the above fabrics; methods of constructing granite weaves; points to be considered in combination weaves; special weaves; honey combs, gauze and imitation gauze, bedford cord, plain and fancy piques, matelasses, etc.; two systems of warp and one system of filling, or two systems of filling and one system of warp for the purpose of figuring; explanation of double cloth, purposes, and class of fabrics in which generally used; representing double cloth weave on design paper; use of different proportions of "back" and "face" for special effects; methods of stitching double cloth so that the stitching will produce a figuring effect; stitching so that it will not show either on "face" or "back" of cloth; leno weaves and method of representing on design paper; methods of making drawing-in drafts, plain and fancy drafts, point, skip, mixed or cross draws; chain drafts;

rules for finding the number of heddles required for each harness; methods used in reducing weaves to the lowest number of harness.

413. Jacquard Designing

SENIOR CLASS; COURSE VI.

Explanation of the various Jacquard machines; methods of shedding, such as, the rise and drop, single lift, double lift machine; single and double cylinder machine; open and closed shed machine; drawing of tie-ups, straight tie-up both in French and English system, point tie-up, combination tie-up for special goods as table damask, Marseilles quilts, etc.; practical operation of tying-up a Jacquard, cutting leashes, threading of comber board, tying on and leveling up mail eyes; figuring comber board for a given texture of goods; casting out hooks to reduce texture of goods without retying the harness, cutting and lacing cards for a given design; selection of design paper for different fabrics, with regard to picks and ends per inch used; methods used in laying out the figure for a Jacquard design; enlarging the sketch for design paper.

414. Cloth Analysis

SENIOR CLASS; COURSE VI.

Methods of arranging cloth sample for analysis; figuring the counts of cotton, woolen, worsted, and silk yarns; calculations for converting one system of yarn into that of another; finding the weight of cloth per yard and the counts of yarn used in its construction from the analysis; figuring width of warp in reed and number of reed to use to produce a given width and texture when woven; calculations to determine the cost of producing a fabric having given values of material, labor, counts, picks and ends per inch, weight per yard, etc.

This work takes up all representative classes of weaves that can be woven on harness, and gives the student a thorough knowledge of figuring yarns, weight of cloth, ends and picks per inch, etc.

Reference books: Ivey's Loom Fixing; Fox's Mechanism of Weaving; Posselt's Technology of Textile Designs; Holmes' Cotton Cloth Designing.

For description of equipment, see page 78.

Textile Chemistry and Dyeing

Assistant Professor James

420. Textile Chemistry

JUNIOR CLASS; COURSE VI.

To the qualitative and quantitative analysis of the general course is added a course of lectures in inorganic chemistry especially relating to the materials used in the various textile processes of mordanting, fixing, scouring, bleaching, etc. Also lectures on organic chemistry, taking up as much of the aliphatic series as is necessary for an understanding of the chemical reactions involved in the application of these compounds to textile operations, and to prepare the student for the study of the aromatic compounds. Toward the end of the year the discussion of the simpler aromatic compounds is begun as an introduction to the special work on synthetic dyestuffs in the senior year.

The laboratory work will include the preparation of typical compounds of each class of derivatives taken up in the lectures.

421. Dyeing

SENIOR CLASS; COURSE VI.

A course of lectures is given which covers that portion of the aromatic series which has reference to the study of the principal synthetic dyestuffs. The laboratory work consists of the preparation of certain typical dyestuffs and the study of their reactions. A complete written report of each experiment is required of the student, and written reviews are given each month on the subjects covered in the lectures and laboratory work. The purpose of the course is to give the student an understanding of the chemistry of the operations by which coal tar products are separated, purified and converted into dyestuffs.

A course of lectures is also given on the application of the different classes of dyestuffs to the various fibres, together with the chemical and physical properties of the latter; bleaching and mercerizing of cotton yarns and cloth; scouring and bleaching of wool; the manufacture of artificial silk; calico printing, etc. In the laboratory the dyeing of cotton and wool is carried on in an experimental way, a study being made of typical dyestuffs of each of the principal

classes. In the dye-house the dyeing of larger quantities of cotton and wool is carried on, as well as the bleaching and mercerizing of cotton, scouring and bleaching of wool, and the printing of calico.

The student is required to make a written report of each experiment performed, accompanied by samples of the dyed material, which have been subjected to the action of various agencies, such as light, acids, alkalies, etc.

The purpose of this training, taken in connection with the work preceding it, is to serve as an introduction to the work of the practical dyer, and to prepare the student for the position of chemist in textile establishments. The constant aim of the instruction is to point out the chemical reactions at the foundation of the above textile operations, so that the student going into practical work in the mills, will have at his command scientific knowledge sufficient to enable him to study intelligently such problems as may come before him in his line of work.

Reference books: Richter's Organic Chemistry; Bernthsen's Organic Chemistry; Holleman's Organic Chemistry; Allen's Commercial Organic Analysis; Heermann's Dyer's Materials; Schultz & Julius' Organic Coloring Matters; Georgievics' Chemical Technology of Textile Fibres; Georgievics' Chemistry of Dyestuffs; Ken-echt, Rawson & Lowenthal's Manual of Dyeing; Beech's Dyeing of Cotton Fabrics; Hummel's Dyeing of Textile Fabrics; Frap's Principles of Dyeing.

For description of equipment, see page 78.

Academic Department

English

Professor Furman

Assistant Professors McLucas, Daniel, Keitt, Bryan

The purpose of the course in English is to enable the student to acquire the power to express his thoughts with clearness, precision and force; and to cultivate in him a taste for good literature. Elementary English grammar and the rudiments of composition are taught in the preparatory class.

500. English Grammar and Word Studies

PREPARATORY CLASS.

This class is carefully prepared for entry upon the work of this College, several of the professors in English having charge of its sections. The intention is to make the English course continuous, so that there may be no break between the preparatory and freshman work, either in teachers or text-books. The books used in the Preparatory class are: Buehler's Grammar, Gilbert's Studies in Words, and such reading texts as may from time to time be selected by the instructors. Special attention is paid to spelling, definition of words, oral reading, and written exercises.

501. English Grammar, Reading and Composition

FRESHMAN CLASS; ALL COURSES

A review of the subject of grammar introduces the work of this class. Constant drill is given in theme writing; pupils being expected to make use of the College library under direction of instructors. Methods of using dictionaries, encyclopedias, and other reference books, are explained practically to the students. Full supplementary readings are required and practice is given in the writing of abstracts of books so read.

Text-books: Emerson-Lockwood's Lessons in English; Buehler's Practical Exercises in English; Webster's School Dictionary; and such English classics as may be assigned.

502. Rhetoric, Composition, American Literature

SOPHOMORE CLASS; ALL COURSES

The study of rhetoric is pursued throughout the year. Constant theme writing is required. To supplement the work in composition, a brief course in American Literature is given, and parallel readings from American authors are assigned.

The text-books are Lewis's Second Manual of Composition, and Noble's Studies in American Literature. The parallel reading for 1904-5 consisted of Franklin's Autobiography, Irving's Alhambra, Cooper's Spy, Hayne's Speech (in the Hayne-Webster debate), Emerson's Nature, Lumell's My Garden Acquaintance, Hawthorne's Scarlet Letter, Selections from the poems of Bryant, Poe, Longfellow, Holmes, Whittier, Lowell, Lanier, and minor Southern poets.

503. English Literature

JUNIOR CLASS; ALL COURSES

The work in the Junior class begins with the critical study of Macaulay as an essayist. This is followed by a general course in English literature. Pancost's English Literature is the text-book—this work being supplemented by lectures. Monthly essays are required, and frequent oral readings, embracing selections from the principal English authors from Chaucer to the present time.

504. Studies in Shakespeare

SENIOR CLASS; ALL COURSES

This class is given instruction in the principles of literary criticism. A somewhat full course in Shakespeare study is furnished. Several plays are read in class—the students being orally examined on all questions, grammatical, historical, and ethical, which arise in the study of this author. Monthly essays are required.

History and Political Economy

Professor Morrison

The course includes history of the United States, South Carolina history, general history, commercial geography, and political economy.

The method of instruction is a combination of the text-book and lecture methods, with parallel reading as far as practicable under the instructor's direction. The class-room is supplied with globes, charts, maps and works of reference, in the use of which the young men are carefully trained. The students make liberal use of the many volumes of poetry, historical romance, biography and history found in the College library.

The history of South Carolina and the history of the South receive special attention. "A people which takes no pride in the noble achievements of a remote ancestry will never achieve anything worthy to be remembered by remote descendants." Every effort is made to enable the young men to see and feel as their fathers and forefathers saw and felt.

510. United States History

PREPARATORY CLASS

Text-book: A School History of the United States, by White.

511. South Carolina History

FRESHMAN CLASS; ALL COURSES

Text-book: Weber's History of South Carolina.

512. Commercial Geography

FRESHMAN CLASS; ALL COURSES

Text-book: Olin's Commercial Geography.

513. General History

SOPHOMORE CLASS; COURSES III., IV., V., VI.

JUNIOR CLASS; COURSES I. AND II.

Text-book: Anderson's New General History.

514. Cívics

SOPHOMORE CLASS; COURSES III., IV., V., VI.

JUNIOR CLASS; COURSES I. AND II.

Text-book: Clark's Government.**515. Political Economy**

SENIOR CLASS; ALL COURSES

Text-book: Gide's Principles of Political Economy, second American edition (1904).**Mathematics***Professor Brodie**Assistant Professors Martin, Reaves, Houston, Shanklin*

This course presupposes a thorough knowledge of arithmetic and algebra through elementary quadratics. (See requirements for admission, page 25.)

520. Algebra

FRESHMAN CLASS; ALL COURSES

Review of involution, evolution, theory of indices and quadratics; simple indeterminate equations; inequalities; proportion and variation, logarithms.

Text-book: Hall and Knight's Algebra for Colleges and Schools.**521. Geometry**

FRESHMAN CLASS; ALL COURSES

Rectilinear figures; circles; similar figures; comparison and measurement of surfaces of polygons; regular polygons and circles. Plane and solid angles; polyhedrons; cylinders and cones; spheres, spherical polygons and pyramids; volume. Special attention is given to the formation, on the part of students, of the habit of clear and accurate reasoning and concise expression.

Text-book: Wentworth's Geometry.

522. Trigonometry

SOPHOMORE CLASS; ALL COURSES

Measurements of angles; trigonometric functions; right triangle; goniometry; relations between functions of one angle; functions of multiple angles; inverse functions; trigonometric equations; oblique triangles; De Moivre's theorem; spherical trigonometry; general formulas; right spherical triangle; oblique spherical triangle; applications.

Text-book: Phillips and Strong's Trigonometry.

523. Descriptive Geometry

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Study of the representation of points, lines, planes, surfaces and solids, and of their relations; tangencies, intersections and developments; shades, shadows and perspective; numerous original exercises.

Text-book: Low's Practical Solid or Descriptive Geometry.

524. Higher Algebra

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Progressions; binominal theorem; theory of limits; convergency; divergency; and summation of series; undetermined coefficients; continued fractions; determinants; theory of equations.

Text-book: Hall and Knight's Algebra for Colleges and Schools.

525. Analytic Geometry

SOPHOMORE CLASS; COURSES III., IV., V., VI.

JUNIOR CLASS; COURSES IV., V., VI.

Cartesian and polar systems of co-ordinates; discussion and construction of loci; the straight line; transformation of co-ordinates; circle; parabola; ellipse; hyperbola; general equation of second degree involving two variables; higher plane curves; solid analytic geometry; systems of co-ordinates; equation of the plane; the straight line in space; surfaces of the second order.

Text-book: Tanner and Allen's Analytic Geometry.

526. Differential Calculus

JUNIOR CLASS; COURSES IV., V.

Differentiation of algebraic functions; transcendental functions; successive differentiation and development of functions; functions of

two variables; tangents and asymptotes; maxima and minima; radius of curvature; evolutes and involutes; envelopes.

Text-book: Snyder and Hutchison's Differential and Integral Calculus.

527. Integral Calculus

JUNIOR CLASS; COURSES IV., V.

Elementary forms of integration; rational fractions; integration of irrational fractions; successive reduction; integration of functions of two variables; lengths of curves; areas of plane curves; rectification of curves; cubature of volumes.

Text-book: Snyder and Hutchison's Differential and Integral Calculus.

Civil Engineering

(Included in the Department of Mathematics.)

530. Plane Surveying

SOPHOMORE CLASS; ALL COURSES

This course includes the general principles and fundamental operations of surveying with compass, level, and transit. The field work includes actual surveys of tracts of land, of which the areas are computed and plats are drawn. Experience is given in problems of laying out and dividing up land, and in locating irregular boundaries. Practice is also had in section and differential leveling.

Text-book: Carhart's Plane Surveying.

531. Higher Surveying

JUNIOR CLASS; COURSE V.

Use and adjustment of transit, stadia, solar compass, and plane-table; topographic surveying with transit and stadia; railroad topography; triangulation; city and hydraulic surveying; mine surveying; geodetic surveying; map and plan drawing; topographical symbols, etc.

Text-book: Johnson's Surveying.

532. Highway Engineering

JUNIOR CLASS; COURSE V.

Location, construction and maintenance of country roads and city streets; advantages of various materials for road covering; effects of grades and surface upon the cost of transportation; plans and specifications; practical problems in change of grade and relocation from surveys of existing roads.

Text-book: Spalding's Roads, Streets and Pavements.

533. Railway Engineering

JUNIOR CLASS; COURSE V.

Preliminary and location surveys; location from contour map; laying out of simple and compound curves; setting of slope stakes; computation of earthwork; switches; turnouts; theory of economic location; effects of grades, curves and length upon the cost of operation.

Text-book: Webb's Railway Construction.

534. Rural Engineering

JUNIOR CLASS; COURSES I., II.

This course is arranged with special view to the needs of the agricultural students. Among the subjects taught are: Farm surveying; laying out and dividing up land; land drainage, including surface-drainage, under-drainage, and hill-side ditching and terracing. Road engineering, a practical course in road making and maintenance, with special reference to conditions in South Carolina. The principles underlying grade and surface resistance, drainage, surfacing, and the best methods of construction are carefully studied. The instruction in the class-room is supplemented by a liberal amount of field practice.

Text-books: Gillespie's Manual of Road-Making; Elliott's Farm Drainage.

535. Railway Engineering

SENIOR CLASS; COURSE V.

Surveys are made for a line of railway a mile or more in length; the necessary plans, profiles and cross-sections are prepared; grades are determined, curves laid out, slope stakes set, and all the needed

measurements made to enable the student to compute the excavations and embankments, and to estimate the cost of construction.

Text-book: Webb's Railway Construction.

536. Structural Engineering

SENIOR CLASS; COURSE V.

Building materials; mechanics of construction; derivation of practical formulas; masonry; foundations on land and in water; stability of walls and arches; analytical and graphical investigation of stresses in plate girders, Howe, Pratt, Warren and other types of highway and railroad bridges, and various forms of roof trusses; bridge design.

Text-books: Wheeler's Civil Engineering; Merriman and Jacoby's Roofs and Bridges, Parts I. and III.

537. Hydraulic Engineering

SENIOR CLASS; COURSE V.

Hydrostatics; efflux; resistance and work of liquids; motion of water in pipes and open channels; derivation of practical formulas; hydrostatic and hydraulic machinery; determination of discharge of stream; head and available power; form and dimensions of pond or reservoir; detailed topography of dam site; determination of form and dimensions for stability of dams; preparation of plans and specifications; lectures on water-supply engineering.

Text-book: Merriman's Hydraulic Engineering.

For description of equipment, see page 79.

Military Department

Captain Clay, U. S. Army, Retired, Director

Commandant of Cadets

Military Science and Tactics

Captain Clay

The course in military instruction, as prescribed and followed, is both theoretical and practical.

600. Tactics and Elements of Military Science

JUNIOR CLASS; ALL COURSES

The theoretical instruction, given by recitations and lectures, includes the following, as prescribed by the War Department: The Infantry Drill Regulations, including the School of the Battalion in both close and extended order; the Manual of Guard Duty.

601. Military Science

SENIOR CLASS; ALL COURSES

Small-arms Firing Regulations; the Articles of War, with special reference to articles 4, 8, 15, 20, 21, 22, 23, 24, 32, 38, 39, 40, 42, 44, 46, 47, 50, 55, 57, 61, and 65. Also the following records: Enlistment and discharge papers, including descriptive lists; morning reports; field and monthly returns; muster rolls; rosters; ration returns; requisitions; property returns.

In addition, ten lectures are given each year upon the following subjects: Two lectures on the organization of the United States Army; one lecture on patrols and outposts; one lecture on marches; one lecture on camps and camp hygiene; three lectures on lines and bases of operations; two lectures on the attack and defence of advance and rear guards, and outposts and convoys.

The articles of war specifically mentioned are among the most important for the young officer to know on first entering the service. The records for study should be thoroughly understood by all graduating cadets, because they show how the soldier enters and leaves the

service; how he is accounted for, paid, fed, clothed, armed; and how his military duties are regulated.

602. Military Drill

REQUIRED OF ALL CADETS

Drill regulations, including the school of the battalion through close and extended order; advance and rear guards and outposts; marches; the ceremonies of battalion review, inspection, parades, guard mounting, and escort of the colors; infantry target practice; instruction in first aid to the injured; guard duty.

In addition to the benefit which the general government derives from the military instruction given at this and other colleges, it is believed that the discipline enforced, the habits of obedience and punctuality inculcated, the improvement in bearing and appearance of those instructed, and also the practice in directing and commanding others, which nearly all in the course of time get, is of immense benefit to the students individually.

ORGANIZATION AND MODE OF
GOVERNMENT

GENERAL INFORMATION

Organization and Mode of Government

The following extracts from the book of "Regulations" explain the organization and mode of government of the corps:

Organization

"1. The President of the College shall have the general command and government of the institution, watching over its administration, discipline and instruction."

"2. The Commandant of Cadets, under the President of the College, has immediate command and control of the corps of cadets in all that pertains to its organization, drill, military police, discipline and administration. He is charged with the instruction of the cadets in the theoretical military course and in all practical military exercises. He will prescribe the order in which the furniture, bedding, books, clothing, equipments, etc., shall be arranged throughout the barracks, and shall, in person, make a minute and thorough inspection of the rooms, furniture, arms and accoutrements, etc., of the cadets at least once each week, and make a report thereon to the President."

"3. For instruction in tactics and for military police and discipline the corps of cadets will be organized into one or more battalions of two or more companies each, and a band when practicable. In case the number of the cadets will permit of the formation of two or more battalions, the organization will be regimental."

"4. The cadet officers and non-commissioned officers will be appointed by the Commandant of Cadets, subject to the approval of the President of the College. The selection for these positions will be made from those cadets who have been most studious and soldier-like in the performance of

their duties and most exemplary in their general deportment. As a rule the cadet captains and lieutenants will be selected from the senior class; the non-commissioned staff and the sergeants from the junior class; and the corporals from the sophomore class.

"5. The field and staff shall consist of two cadet majors, two cadet lieutenants and adjutants, one cadet captain and adjutant, one cadet captain and quartermaster. The non-commissioned staff shall consist of one regimental sergeant-major, one regimental quartermaster-sergeant, two battalion sergeant-majors, and one regimental color sergeant."

"6. In each company there shall be one captain, two lieutenants, one first sergeant, one company quartermaster-sergeant, and as many sergeants and corporals as may be required."

"7. Each of the battalions will be commanded, when on drill, and at such other times as the Commandant of Cadets shall direct, by its Cadet Major."

"8. On the graduation of every class the Commandant of Cadets shall obtain the names of such cadets as shall have shown special aptitude for military service, and furnish a list thereof to the Adjutant General of the State for his information. A copy of this list will also be sent to the Adjutant General of the United States Army, and the names of the three most distinguished students in military science and tactics, will, when graduated, be inserted in the United States Army Register."

Leave of Absence

Communications from parents, requesting leave of absence from the College for their sons, must be addressed directly to the President and not through the cadets.

The rules governing in cases of permits to visit home during the session of the College require that cadets who have

accumulated more than eight demerits in any one term, and who have fallen below grade two in their studies on any report, will not be allowed to leave College during the term except in cases of extreme sickness or death in the family.

No leave of absence or honorary discharge will be granted after May 1st, except for serious causes.

Students who have been granted leaves of absence and who stay over the date allowed, unless for sickness or other good and valid reasons, will be required to pay again the incidental fee of \$5.00 before they will be permitted to continue their studies. In case of sickness, a certificate from the attending physician must be submitted to the President.

General Regulations

In addition to the special regulations of the military department, a copy of which is given each cadet, the following general regulations are enforced:

Cadets are subject to military discipline at all times, and are required to take part in drill, guard duty and other military exercises.

All undergraduate students are required to board in the barracks, except those who live with their parents or relatives near enough to attend from their homes.

Each student is required to purchase the prescribed uniform; also a pair of over-shoes and a water-proof coat. Students may provide themselves with such work-clothes as they desire.

Those occupying a room are consulted before another student is assigned to that room. A student not satisfied with his room-mate has the privilege of applying for permission to move to another room, and such applications are granted when practicable.

Cadets must at all times be respectful in their bearing to professors and other officers of the College.

The practice known as hazing is positively forbidden. All cadets, upon matriculation, shall be required to sign a pledge not to indulge in hazing or injuring in any form the person of any cadet or give countenance or encouragement thereto while a member of the corps of cadets. Any cadet indulging in this practice will be dismissed from the College.

Cadets are positively forbidden to use, or have in their possession, intoxicating liquors of any description.

Profanity and gambling are positively forbidden.

All combinations of cadets for the purpose of censuring one of their number are prohibited; also all combinations to defeat the purpose of any regulation of the College.

If any cadet shall consider himself wronged by another, or by an officer of the College, he has the right to complain thereof in writing to the President, who will examine into the complaint and take such measures for redressing the wrong as he may deem proper.

Cadets are forbidden to keep any fire-arms or other weapons in their possession not issued by the proper authority.

Any cadet receiving 100 demerits during a College term shall be brought before the Discipline Committee and shall be dismissed or less severely punished.

Any cadet who leaves barracks without authority between retreat and reveille shall be dismissed.

The College rules require that all students be vaccinated, and parents are advised to have this done before sending their sons away from home.

Cadets who receive no demerits during any calendar month will be given a credit of eight to be applied in removing any demerits they may have had charged against them during any preceding months of that term.

Religious Exercises

Chapel Services.—There is preaching in Memorial Hall every Sunday morning by ministers of the different denominations, and chapel services are conducted every morning by the President and members of the Faculty. All students are required to attend these exercises unless specially excused.

Sunday School.—A Sunday School, at which attendance is voluntary, also meets every Sunday morning, and students are encouraged and urged to attend.

Young Men's Christian Association.—This is a voluntary organization of the students, and is entirely under their management. The objects of the Association are to promote Christian fellowship among its members and aggressive Christian work among the students. The meetings are held in Memorial Hall every Sunday evening. The membership is of two classes—active and associate. A member in good standing of any evangelical church may become an active member of the Association, and any young man of good moral character may become an associate member. The Faculty are in hearty sympathy with the work of the Association, and render cheerful service when requested to do so. Parents and guardians are advised to encourage the students to join the Association as soon as they reach the College.

Churches.—Episcopalian and Presbyterian churches are located near the College, and a number of students attend their Sunday Schools and preaching services.

Care of the Sick

The Surgeon is one of the regular officers of the College, and his special duty is to look after the health of the students. He also has charge of the hospital and supervises all matters pertaining to the sanitation of barracks.

At a regular appointed time every day, students who so desire may consult the Surgeon; and those who are sick are

cared for by experienced nurses in the College hospital. In case of necessity, students are allowed to consult the Surgeon at any time, or send for him, as may be required.

Parents will be kept fully informed of the condition of sick students. The Surgeon, however, cannot undertake to notify parents every time a student reports to the hospital for medicine, or for rest on account of some slight complaint. Parents may always rest assured that they will be promptly notified of sickness of any consequence; and in case of serious illness the Surgeon will telegraph them.

Student Labor

The College assumes no obligation to furnish employment to students for wages. Considerable manual labor, however, is necessary to carry on the various departments of the College; and, when practicable, students are employed in this work, and are paid at the rate of eight cents an hour. The number applying for work always exceeds the number that can be employed, and those who enter College late in the session are at a special disadvantage in securing work.

No student is allowed to undertake work that interferes with his College course.

Literary Societies

Three literary societies, the Calhoun, the Columbian and the Palmetto, furnish a valuable supplement to the work of the College. These societies afford facilities for practice in debate, oratory, declamation and essay-writing, and their members acquire valuable knowledge of parliamentary law and usage. The meetings are held weekly on Saturday evenings. An annual contest is also held by each society, at which there are debates, orations and declamations by the students.

On these occasions a representative is chosen from each

society to enter the contest for the Trustees Medal at commencement. The societies themselves also award medals annually to the best debater, orator, and declaimer.

The societies occupy halls in the main College building, which are furnished with carpets and opera-chairs, and are maintained entirely by the students. A small fee is charged for initiation, and there are also monthly dues of a few cents to meet running expenses. All students are advised to join one of these societies.

State Oratorical Association

The literary societies also send a representative to the annual contests of the South Carolina Intercollegiate Oratorical Association, which includes the following institutions: Furman University, Wofford College, Clemson Agricultural College, Presbyterian College of South Carolina, Erskine College, Newberry College, and South Carolina Military Academy.

Publications by the Students

The Clemson College Chronicle, a monthly magazine designed to encourage literary work among the students, is published jointly by the literary societies during the College session.

The Oconeean is the name adopted for the annual, an illustrated volume published under the auspices of the senior class.

Science Club

The Clemson College Science Club was organized for the purpose of promoting knowledge of the progress of the natural sciences, theoretical and applied. Public meetings are held every month, at which subjects of general scientific interest are discussed by members of the Faculty and advanced students of the College.

Lecture Course

A lecture course, employing some of the best talent on the American platform, is provided every session. These lectures are delivered in Memorial Hall, at a cost to students of \$1.00 for the course. During the session of 1904-1905, the following lectures and concerts were given:

- I. Charles Battell Loomis; Author—Humorist. Oct. 12
- II. Prof. S. H. Clark, University of Chicago,
"Ulysses" Nov. 5
- III. Anna Delong Martin. Nov. 25
- IV. Siegel Meyer-Dainty Company (Musical) . . . Dec. 3
- V. Angelo Heilprin, F. R. G.—"Tragedy of Mar-
tinique," Illustrated Jan. 11
- VI. Whitney Brothers Quartette. Jan. 14
- VII. Lotus Glee Club and Miss Smith. Feb. 16
- VIII. Hawthorne Musical Club. Mar. 6.
- IX. Dr. Russell H. Conwell—"An Acre of
Diamonds" Mar. 10
- X. "Every Man," R. E. Magnus and Company. . Mar 21
- XI. Pringle Concert Company Apr. 12

Cadet Exchange

A Cadet Exchange is maintained, where students may purchase at wholesale prices necessary articles, such as books, stationery, collars, cuffs, underwear, etc.

College Athletics

It is the policy of the College to sanction and encourage athletics so long as they do not interfere with studies and other duties. Football and baseball are the most popular games, and it is assumed that parents are willing for their sons to participate in these games unless the President is definitely notified to the contrary. The athletic teams are permitted to take a few trips each season, usually on Satur-

days, to play intercollegiate games. Students must file written permission from parents for these trips.

Athletic Council.—The Southern Intercollegiate Athletic Association, of which the College is a member, has placed the athletic interests of each college under the supervision of an Athletic Council, consisting of members of the Faculty and of the student body. This council consists of nine members—two members of the Faculty selected by the students for president and secretary-treasurer, respectively, three members of the Faculty chosen by the Faculty, and four students.

Intercollegiate Athletics.—For the regulation of intercollegiate athletics, the Faculty has adopted the following rules:

1. Any student who fails on more than two subjects during a collegiate month shall not be allowed to participate in match games during the ensuing month. If, by reason of absence or other cause, a grade on the month's work is lacking, the instructor shall give a temporary grade based upon the work done, and this temporary grade shall be used in determining the student's athletic standing until the regular grade is available.

2. No student who is found to be deficient in any subject for a term shall be allowed to play in any match game during the next college year. Change from one course to another or from a regular to an irregular or special course shall not interfere with the operation of this rule.

3. No graduate student shall participate in any match game unless he is taking at least twenty hours per week of graduate work; that is, work of a higher grade than is given in the regular college courses. Such student shall also conform to the rules of class standing as set forth in sections 1 and 2. Further, no graduate student of more than one year's standing shall participate in any match game.

4. No irregular or special student shall be allowed to represent the College in any match game unless taking at least 24 hours work per week, of which not less than 12 hours shall be "theoretical" work.

5. No football player who leaves College before the end of the first term, except for reasons satisfactory to the Faculty Athletic Committee, shall be allowed to participate in match games during the next three college terms.

6. It shall be the duty of the Faculty Athletic Committee to see that the foregoing rules and regulations are strictly enforced.

7. No team shall be allowed to leave the college grounds to participate in match games unless accompanied by a member of the Faculty, who shall be responsible to the Faculty for the conduct of the players and coaches while away from the College. Such representative shall be appointed by the Chairman of the Faculty Athletic Committee, and his expenses shall be included in the expenses of the trip.

Field Day.—May 1st is observed as a holiday for contests in track and field athletics, such as running, hurdling, high and broad jumping, pole-vaulting, hammer-throwing, putting the shot, etc., and is known as "Field Day."

Donations

Textile Department.

The A. T. Atherton Machine Co., Pawtucket, R. I.—One automatic feeder; one finisher lapper; one lot lap rods; half value on breaker lapper.

Saco & Pettee Machine Co., Newton Upper Falls, Mass.—One 40-in. revolving top flat card; one Entwistle traverse grinder; one Entwistle drum grinder; one burnisher; one set carder's tools; one improved railway head, with back, front and full cam stop motion; one 4 delivery draw frame, with back, front and full cam stop motion, fitted with single preventer rolls; one 40 spindle slubber; one 60 spindle intermediate roving frame; one 80 spindle fine roving frame; one 128 spindle combination warp and filling ring spinning frame; one 72 spindle improved spooler. A sufficient number of gears were sent with these machines to make various changes that may be necessary.

Mason Machine Works, Taunton, Mass.—One 40-in. revolving top flat card; one Entwistle drum grinder; one stripper brush; one set carders' tools; one railway head, with back, front and full cam stop motion; one 4 delivery draw

frame, with back, front and full cam stop motion, fitted with single preventer roll; one 112 spindle combination warp and filling ring spinning frame; one 40-in. plain loom; one 36-in. fancy cotton loom; one 36-in. 24 harness dobby loom; half value on combing machinery. All necessary gears with these machines to make the required changes.

The D. A. Tompkins Co., Charlotte, N. C.—One adjustable reel; one draw-in frame; one loom box; one doffer box; two section beams; one switch board, complete; one emery wheel and stand.

Draper Co., Hopedale, Mass.—One 40-in. Northrop loom; one 28-in. Northrop loom; one 48 spindle combination wet and dry twister; one 40 spindle spooler; one section warper; one ball warper; section beams; temples as required; loom findings.

Crompton & Knowles Loom Works, Providence, R. I.—Half value on following: One 32-in. loom, with 416 hook Jacquard; one 32-in. loom, with leno attachment; one 65-in. 4x1 box loom, with 624 hook Jacquard; one 36-in. Knowles "Gem" loom; one 36-in. fancy cotton towel loom; one 30-in. Knowles fancy cotton loom, with 16 harness dobby; two 16 harness dobbies.

Universal Winding Co., Boston, Mass.—One 6 spindle cone and tube winder.

Woonsocket Machine and Press Co., Woonsocket, R. I.—Half value on one 96 spindle jack roving frame.

T. C. Entwistle, Lowell, Mass.—Half value on one beaming frame.

Fales & Jenks Machine Co., Pawtucket, R. I.—Two combination warp and filling spinning frames, 80 spindles each; one wet twister, combined filling and taper top wind, 70 spindles; half value on twister like above.

T. B. Wood's Sons, Chambersburg, Pa.—One-fourth value

on equipment of shafting, hangers and pulleys used in new extension of building.

Jones & Laughlin Co., Limited, Pittsburg, Pa.—The entire original equipment of shafting, hangers and pulleys.

Whitin Machine Works, Whitinsville, Mass.—Half value on following: One 40-in. cam loom; one 40-in. loom, with 20 harness dobby; one 30-in. duck loom; two combination warp and filling ring spinning frames, 80 spindles each.

Schaum & Uhlinger, Philadelphia, Pa.—One top engine drive, self-balancing, hydro-extractor.

The Metallic Drawing Roll Co., Indian Orchard, Mass.—Metallic drawing rolls for railway heads and draw frames as required.

Westinghouse Electric Co., East Pittsburg, Pa.—One 22 K. W., 220 volt direct current motor.

The American Moistening Co., Boston, Mass.—Complete system of "Vortex" humidifiers, including pump, tank and connections.

Beattie Machine Works, Cohoes, N. Y.—One single elastic stitch looper.

E. Jenckes Manufacturing Co., Pawtucket, R. I.—One "Invincible" seamless hosiery knitting machine.

W. W. Altemus & Son, Philadelphia, Pa.—One bobbin winder.

New Bedford Paper Co., New Bedford, Mass.—Cops, cones, tubes, etc., as required.

Charlotte Supply Co., Charlotte, N. C.—All belting as required.

American Supply Co., Providence, R. I.—Heddles, heddle frames, reeds and loom supplies as required.

Loom Picker Co., Biddeford, Me.—Loom supplies.

The Emmons Loom Harness Co.—Cotton harness, reeds and loom supplies.

Roney & Rae Co., Woonsocket, R. I.—Twelve bobbin holders.

Steel Heddle Manufacturing Co., Philadelphia, Pa.—2,500 patented flat steel heddles.

R. A. Blythe, Philadelphia, Pa.—One lot mercerized yarns.

Barber & Coleman, Boston, Mass.—One Barber knotter.

National Ring Traveller Co., Providence, R. I.—One lot of spinning and twister travellers.

DeHaven Manufacturing Co., Brooklyn, N. Y.—One lot of spinning and twister travellers.

Victor Shaw Ring Traveller Co., Providence, R. I.—One lot spinning travellers.

Morley Button Manufacturing Co., Boston, Mass.—One lot spinning travellers.

Sykes & Street, New York, N. Y.—Collection of dye stuffs.

New York and Boston Dyewood Co., New York, N. Y.—Collection of dye stuffs.

Victor G. Bloede & Co., Baltimore, Md.—Collection of dye stuffs and mordants.

Cassella Color Co., New York, N. Y.—Large collection of dye stuffs.

Kuttroff, Pickhardt & Co., New York, N. Y.—Collection of dye stuffs.

Farbenfabriken, of Elberfeld Co., New York, N. Y.—Large collection of dye stuffs, over 300 samples.

H. A. Metz & Co., New York, N. Y.—Large collection of dye stuffs.

Grasselli Chemical Co., New York, N. Y.—Chemicals used in dyeing.

Schoellkopf, Hartford & Hanna & Co., Buffalo, N. Y.—Large collection of dye stuffs.

Roessler & Hasslacher Chemical Co., New York, N. Y.—Sodium peroxide for bleaching demonstrations.

Berlin Aniline Works, New York, N. Y.—Collection of dye stuffs.

Chas. J. Fox, Philadelphia, Pa.—50 lbs. textile soaps.

Kalle & Co., New York, N. Y.—Collection of dye stuffs.

A. Klipstein & Co., New York, N. Y.—Collection of dye stuffs.

Southern Railway Co.—Half freight rates, over their lines, on entire original equipment of machinery.

Donations to the Library

Since the publication of the last catalogue, the library has received gifts from the following:

Dr. R. N. Brackett ("The Nation" and "Century Magazine" for the year); the State Geologist (1 vol.); American Swedenborg Society (25 vols.); The Clemson College Chronicle (1 vol.); C. M. Calhoun (2 vols.); Wm. A. Courtenay (Map of Pendleton District); Staff of Clemson Annual of 1905 (1 vol.); Subscriptions to the following: "The Prairie Farmer;" "The Progressive Farmer;" "The Farmers' Review;" "The Southern Farm Gazette;" "The American Agriculturist;" "The Greenville Daily News;" "The Spartanburg Herald;" "The Herald and News;" "The Patriot;" "The Oconeean;" "The News and Review;" "The Clinton Chronicle;" "The Baptist Courier."

NOTE.—A special book is kept in which the record of every donation is preserved, and a special label, stating the name of the donor, is placed in each volume presented.

Donations to the Museum

A silver sewing bird formerly owned by Mrs. John C. Calhoun, and afterwards by her daughter, Mrs. Clemson, has been contributed by Mr. J. C. Stribling, of Pendleton, S. C.

The pen used by the original seven Life Trustees in accepting the Clemson bequest has also been presented by Mr. J. C. Stribling.

Experiment Station and Inspection Work

Clemson College is not only engaged in providing courses of instruction for the youths of the State, but under the laws of South Carolina it is conducting work of great importance to the farmers, fruit growers, and people engaged in animal industry. There are four departments of experimentation and inspection inaugurated by the Board of Trustees:

1. Experiments in Agriculture (State Experiment Station).
2. Inspection of Fertilizers.
3. Veterinary Inspection.
4. Entomological Inspection.

The Experimental Station is devoted to experiments in subjects relating to the chemical composition of plants and soils; rotation experiments; plant breeding; study of forage plants for hay and pasturage; plant diseases; diseases of animals, such as tuberculosis, Texas fever, glanders; feeding of pigs; general dairy experiments; insects injurious and beneficial to plants; studies of varieties of fruits; methods of pruning grape vines, etc.

Bulletins giving the results of these experiments are published at intervals during the year, and are mailed free to every one who applies for them.

Although the Station was established for the benefit of the farmers, students of the College profit by the experiments, in connection with the regular courses of study.

The second division, viz: the inspection of fertilizers, is conducted by the Board of Trustees for the protection of the farmers in the State against the introduction of fraudulent brands of fertilizers. The inspectors are appointed by the Board of Trustees and the entire work of issuing tags, the analysis of samples and the enforcement of the law, is in the hands of the Board of Trustees of Clemson College. After paying the expenses required for conducting this inspection, all the surplus money is turned over to the College for running expenses and equipment.

On the 19th of February, 1901, the General Assembly passed an Act empowering the Board of Trustees of Clemson College to promulgate and enforce rules and regulations for the guidance of the Veterinarian of the College in the treatment or destruction of animals affected with contagious diseases, and to prescribe the powers of the Veterinarian whenever such diseases appear in any part of the

State. In view of the frequent appearance of glanders and other contagious diseases in the State, this law will prove of great benefit to the stock-raising industry.

The Entomologist is required by the State law to inspect all nursery stock coming into the State and to prevent the ravages of insects as far as possible.

On the 19th of February, 1901, the General Assembly passed an Act requiring the Board of Trustees of Clemson College to designate three of their number, to be known as the State Board of Entomology. To the said Board was given full power to adopt rules and regulations governing the inspections relative to the sale and transportation of trees, plants, shrubs, cuttings, buds, vines, bulbs, or roots that they may deem advisable in order to prevent or remove or destroy any insect pests or plant diseases in the State. The Board was also given power to appoint an Entomologist, who should be a skilled Horticulturist, and Assistant Entomologist, if, in their judgment, it would be impossible for the Entomologist to discharge the duties hereby devolved upon him. Such an Entomologist was also given the powers of an inspector, with authority to visit in sections of the State where insects injurious to plants are believed to exist, and to determine whether such plants should or should not be destroyed.

Popular Science Bulletins

In addition to the Experiment Station bulletins setting forth the results of experiments and other investigations in the interest of agricultural industries, the College has inaugurated a series of bulletins on a variety of scientific subjects of interest to the people at large, and written, as far as practicable, in non-technical language. A number of these are now in preparation, including the subjects of road construction and maintenance, protection against lightning, etc. They will be mailed, like the Experiment Station bulletins, free of charge to those who apply for them.

Analyses, Information, Etc.

The various departments of the College and Experiment Station will furnish, free of charge, advice and information on any topic pertaining to general agriculture, horticulture, botany, entomology, veterinary science, dairying, stock breeding, etc.; also, analyses of fertilizers, marls, waters and other substances, assays of ores, determination of rocks and minerals, tests of bricks, cements, building stones, illuminating oils, calibration of electrical instruments, etc.

The departments cannot undertake to analyze stomachs or other parts of poisoned animals or to make tests for poisons.

All inquiries and requests should be addressed to the President, giving explicit account of conditions, difficulties, etc., as far as possible, and the matter will be referred promptly to the proper department for further correspondence.

Before sending samples of any kind for examination or analysis, it is best to write for instructions, and thus avoid trouble and delay.

Analyses for State Geologist

In addition to the work referred to above, analyses are made for the State Geologist of the various materials collected by him. These analyses are made as provided for in paragraph 14, section 1, Act of the General Assembly No. 605, approved February 22, 1902.

Farmers' Institutes

During the year farmers' institutes are held, under the management of the College, in many counties of the State. The President and professors of agriculture, chemistry, horticulture, dairying, veterinary science, botany and other members of the Faculty take part in these institutes. The effort is made to bring practical information to the farmer, and to give him the results of scientific investigation in the interest of agriculture. The success thus far attained is most encouraging, and these institutions have become a permanent feature in the work of the College.

Farmers wishing an institute held in their county or community should write to the President.

The State Farmers' Institute, of four days' duration, is held annually at the College during the month of August. Besides the College Faculty, a number of prominent speakers from this and other States attend this institute and participate in the lectures and discussions.

Thomas G. Clemson's Will

The following paragraphs are extracts from Mr. Clemson's will relating to the establishment of the College:

Whereas, I, Thomas G. Clemson, of the County and State aforesaid, did on the 14th of August, 1883, execute my last will and testament, wherein I sought to provide for the establishment of a scientific institution upon the Fort Hill place, and therein provided what sciences should be taught in said institution; and whereas, I am now satisfied that my intention and purpose therein may be misunderstood as in-

tending that no other studies or sciences should be taught in said institution than those mentioned in said will, which was not my purpose or intention: Now, desiring to make my purpose plain, as well as to make some other changes in the disposition of my property than made in said will, I do now make, publish and declare this instrument as and for my last will and testament, hereby revoking all previous wills and codicils by me made, especially the will above referred to, dated August 14th, 1883. Feeling a great sympathy for the farmers of this State, and the difficulties with which they have to contend in their efforts to establish the business of agriculture upon a proper basis, and believing there can be no permanent improvement in agriculture without a knowledge of those sciences which pertain particularly thereto, I have determined to devote the bulk of my property to the establishment of an Agricultural College upon the Fort Hill place. My purpose is to establish an Agricultural College which will afford useful information to the farmers and mechanics; therefore it should afford thorough instruction in agriculture and the natural sciences connected therewith; it should combine, if practicable, physical with intellectual education, and should be a high seminary of learning in which the graduate of the common schools can commence, pursue and finish a course of studies terminating in thorough theoretic and practical instruction in those sciences and arts which bear directly upon agriculture. But I desire to state plainly, that I wish the Trustees of said institution to have full authority and power to regulate all matters pertaining to said institution, to fix the course of studies, to make rules for the government of the same, and to change them, as in their judgment experience may prove necessary; but to always bear in mind that the benefits herein sought to be bestowed are intended to benefit agricultural and mechanical industries. I trust I do not exaggerate the importance of such an institution for developing the material resources of the State, by affording its youth the advantage of scientific culture, and that I do not over-rate the intelligence of the Legislature of South Carolina, ever distinguished for liberality, in assuming that such appropriations will be made as will be necessary to supplement the fund resulting from the bequest herein made.

ITEM 1.—I therefore give and devise to my executor hereinafter named, the aforesaid Fort Hill place, where I now reside, formerly the house of my father-in-law, John C. Calhoun, consisting of eight hundred and fourteen acres, more or less, in trust that whenever the

State of South Carolina may accept said property as a donation from me, for the purpose of thereupon founding an Agricultural College, in accordance with the views I have hereinbefore expressed (of which the Chief Justice of South Carolina shall be the Judge), then my executor shall execute a deed of the said property to the said State and turn over to the same all property hereinafter given as an endowment of said institution, to be held as such by the said State so long as it in good faith devotes said property to the purpose of the donation: *Provided, however,* That this acceptance by the State shall be signified, and a practical carrying out be commenced, within three years from the date of the probate of this my will. During this term of three years, or as much thereof as may elapse before the acceptance or refusal of this donation, my executor shall invest the net produce of the land and other property, such invested fund awaiting the action of the Legislature, and to form a part of the endowment of said institution, if accepted, or to form a part of the endowment of the college or school hereinafter provided for, should the donation not be accepted by the State.

ITEM 2.—The following named gentlemen, seven in number, shall be seven of the Board of Trustees, to wit: R. W. Simpson, D. K. Norris, M. L. Donaldson, R. E. Bowen, B. R. Tillman, J. E. Wanner, and J. E. Bradley; and the State if it accepts the donation shall never increase the Board of Trustees to a number greater than thirteen in all, nor shall the duties of said Board be taken away or conferred upon any other men or body of men. The seven Trustees appointed by me, shall always have the right, and the power is hereby given them and their successors, which right the Legislature shall never take away or abridge, to fill all vacancies which may occur in their number by death, resignation, refusal to act, or otherwise. But the Legislature may provide as it sees proper for the appointment or election of the other six Trustees, if it accepts the donation. And I do hereby request the seven Trustees above named, or such of them as may be living, or may be willing to act, to meet as soon after my death as practicable, and organize and at once fill all vacancies that may have occurred, and exert themselves to effectuate my purposes as herein set forth. And I hereby instruct my executor to notify them of their appointment herein, as soon as practicable. The name of this institution is to be "The Clemson Agricultural College of South Carolina."

ITEM 4.—It is my desire that the dwelling house on Fort Hill shall never be torn down or altered, but shall be kept in repair, with all

the articles of furniture and virtu, which I hereinafter give for that purpose, and shall always be open for the inspection of visitors; but a part of the house may be used by such of the Professors as the Trustees may direct.

Laws of Congress Relating to the College

AN ACT donating public lands to the several States and Territories which may provide Colleges for the benefit of agriculture and the mechanic arts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be granted to the several States, for the purpose hereinafter mentioned, an amount of public land, to be apportioned to each State a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty: *Provided*, That no mineral lands shall be selected or purchased under the provisions of this Act.

SEC. 2. *And be it further enacted*, That the lands aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections not less than one-quarter of section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands within the limits of such State; and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public land subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this Act, land script to the amount of acres for the deficiency of its distributive share; and script to be sold by said State, and the proceeds thereof applied to the uses and purposes prescribed in this Act, and for no other use or purpose whatever: *Provided*, That in no case shall any State to which land script may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said land script upon any of the unappropriated lands of the United States subject to sale at private entry, at one dollar and twenty-five cents or less per acre; *and provided further*, That not more than one million acres shall be located by such assignees in any one of the States; *and provided further*, That no

such location shall be made before one year from the passage of this Act.

SEC. 3. *And be it further enacted*, That all the expenses of management, superintendence and taxes, from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom, shall be paid by the States to which they may belong, out of the treasury of said States, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. *And be it further enacted*, That all moneys derived from the sale of the lands aforesaid by the State to which the lands are apportioned, and from the sale of land script hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or of some other safe stocks yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in fifth Section of this Act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this Act to the endowment, support and maintenance of at least one College, where the leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, and in such manner as the Legislature of the States may prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

SEC. 5. *And be it further enacted*, That the grant of land and land script hereby authorized shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts.

1. If any portion of the fund invested as provided by the foregoing section, or any portion of the interest thereon, shall by any act or contingency be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth Section of this Act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this Act may be expended for the purchase of lands for sites of experiment farms whenever authorized by the respective Legislatures of said States.

2. No portion of said fund, nor interest thereon, shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

3. Any State which may take and claim the benefit of the provisions of this Act, shall provide within five years at least not less than one College, as described in the fourth Section of this Act, or the grant to said State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold, and the title to purchasers under the State shall be valid.

4. An annual report shall be made regarding the progress of each College, recording any improvements and experiments made, with their costs and results, and such other matters, including State and industrial statistics, as may be supposed useful; one copy of which shall be transmitted by mail free by each to all the other Colleges which may be endowed under the provisions of this Act, and also one copy to the Secretary of the Interior.

5. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the State at the maximum price, and the number of acres proportionately diminished.

6. No State, while in a condition of rebellion or insurrection against the government of the United States, shall be entitled to the benefit of this Act.

7. No State shall be entitled to the benefit of this Act unless it shall express the acceptance thereof by the Legislature within two years of the date of its approval by the President.

SEC. 6. *And be it further enacted*, That land scrip issued under the provisions of this Act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three.

SEC. 7. *And be it further enacted*, That the land officers shall receive the same fees for locating land scrip issued under the provisions of this Act as are now allowed for the location of military bounty land warrants under existing laws: *Provided*, That maximum compensation shall not be thereby increased.

SEC. 8. *And be it further enacted*, That the Governors of the several States to which scrip shall be issued under this Act shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved July 2, 1862.

AN ACT to establish Agricultural Experiment Stations in connection with the colleges established in the several States under the provisions of an Act approved July 2, 1862, and of the Acts supplementary thereto.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science, there shall be established, under direction of College or Colleges, or Agricultural Department of Colleges in each State or Territory established, or which may hereafter be established, in accordance with the provisions of an Act approved July 2, 1862, entitled "An Act donating public lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts," or any of the supplements to said Act, a department known and designated as an "Agricultural Experiment Station:" Provided, That any State or Territory in which two such Colleges have been or may be so established, the appropriation hereinafter made to such State or Territory shall be equally divided between such Colleges, unless the Legislature of such State or Territory shall otherwise direct.

SEC. 2. That it shall be the object and duty of said Experiment Stations to conduct original researches or verify experiments on the physiology of plants and animals; the disease to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying condition and needs of the respective States and Territories.

SEC. 3. That in order to secure, as far as practicable, uniformity

of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to furnish forms, as far as practicable, for the tabulation of results of investigation or experiments; to indicate, from time to time, such lines of inquiry as to him shall seem most important; and, in general, to furnish such advice and assistance as will promote the purposes of this Act. It shall be the duty of each of said stations annually, on or before the first day of February, to make to the Governor of the State or Territory in which it is located a full and detailed report of its operations, including a statement of receipts and expenditures, a copy of which report shall be sent to each of said stations, to the Commissioner of Agriculture, and to the Secretary of the Treasury of the United States.

SEC. 4. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore prescribed, the sum of \$15,000 per annum is hereby appropriated to each State, to be especially provided for by Congress in the appropriations from year to year, and to each Territory entitled under the provisions of Section eight of this Act, out of any money in the treasury proceeding from the sales of public lands, to be paid in equal quarterly payments, on the first day of January, April, July and October in each year, to the Treasurer or other officer duly appointed by the governing boards of said Colleges to receive the same, the first payment to be made on the first day of October, 1887: *Provided, however,* That out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection, enlargement, or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five per centum of such annual appropriation may be so expended.

SEC. 6. That whenever it shall appear to the Secretary of the

Treasury from the annual statement of receipts and expenditures of any of said stations that a portion of the preceding annual appropriation remains unexpended, such amount shall be deducted from the succeeding annual appropriation to each station, in order that the amount of money appropriated to any station shall not exceed the amount actually and necessarily required for its maintenance and support.

SEC. 7. That nothing in this Act shall be construed to impair or modify the legal relation existing between any of the said Colleges and the government of the States or Territories in which they are respectively located.

SEC. 8. That in States having Colleges entitled under this Section to the benefits of this Act and having also Agricultural Experiment Stations established by law separate from said Colleges, such States shall be authorized to apply such benefits to experiments at stations so established by such States; and in case any State shall have established under the provisions of said Act of July 2d aforesaid, an Agricultural Department or Experimental Station, in connection with any University, College, or institution not distinctively an Agricultural College, or School, and such States shall have established or shall hereafter establish a separate Agricultural College or School, which shall have connected therewith an Experimental Farm or Station, the Legislature of such State may apply in whole or in part the appropriation made by this Act, to separate Agricultural College or School, and no Legislature shall by contract expressed or implied disable itself from so doing.

SEC. 9. That the grant of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purposes of said grants: *Provided*, That payment of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of its Legislature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to by the Secretary of the Treasury.

SEC. 10. Nothing in this Act shall be held or construed as binding the United States to continue any payments from the Treasury to any or all the States or institutions mentioned in this Act, but Congress may at any time amend, suspend or repeal any or all the provisions of this Act.

Approved March 2, 1887.

AN ACT to supply a portion of the public lands to the more complete endowment and support of Colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an Act of Congress, approved July second, eighteen hundred and sixty-two.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be, and hereby is, annually appropriated out of any money in the Treasury not otherwise appropriated, arising from the sales of public lands, to be paid as hereinafter provided, to each State and Territory for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts now established, or which may be hereafter established, in accordance with an Act of Congress, approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirtieth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years by an additional sum of one thousand dollars over the preceding year, and the annual amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction: *Provided*, That no money shall be paid out under this Act to any State or Territory for the support and maintenance of a college where a distinction of race or color is made in admission of students, but the establishment and maintenance of such colleges separately for white and colored students shall be held to be a compliance with the provisions of this Act if the funds received in such State or Territory be equitably divided as hereinafter set forth: *Provided*, That in any State in which there has been one college established in pursuance of the Act of July second, eighteen hundred and sixty-two, and also in which an educational institution of like character has been established, or may be hereafter established, and is now aided by such State from its own revenue for the education of colored students in agriculture and the mechanic arts, however named or styled, or whether or not it has received money heretofore under the Act to which this Act is an amendment, the Legislature of such State may propose and report to the Secretary of the Interior a just and equi-*

table division of the funds to be received under this Act between one college for white students and one institution for colored students established as aforesaid, which shall be divided into two parts and paid accordingly, and thereupon such institution for colored students shall be entitled to the benefits of this Act and subject to its provisions, as much as it would have been if it had been included under the Act of eighteen hundred and sixty-two, and the fulfillment of the foregoing provisions shall be taken as a compliance with the provision in reference to separate colleges for white and colored students.

SEC. 2. That the sum hereby appropriated to the States and Territories for the further endowment and support of colleges shall be annually paid on or before the thirty-first day of July of each year, by the Secretary of the Treasury upon the warrant of the Secretary of the Interior, out of the Treasury of the United States, to the State or Territorial Treasurer or to such officer as shall be designated by the laws of such State or Territory to receive same, who shall, upon the order of the trustees of the college, or the institution for colored students, immediately pay over said sums to the Treasurers of the respective colleges or other institutions entitled to receive the same, and such Treasurers shall be required to report to the Secretary of Agriculture and to the Secretary of the Interior on or before the first day of September of each year, a detailed statement of the amount so received and of its disbursement. The grants of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purpose of said grants: *Provided*, That payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of Legislature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 3. That if any portion of the moneys received by the designated officer of the State or Territory for the further and more complete endowment, support and maintenance of colleges, or of institutions for colored students, as provided in this Act, shall, by any action or contingency, be diminished or lost, or be misapplied, it shall be replaced by the State or Territory to which it belongs, and until so replaced no subsequent appropriation shall be apportioned or paid to such State or Territory; and no portion of said moneys shall be applied directly or indirectly, under any pretense whatever,

to the purchase, erection, preservation or repair of any building or buildings. An annual report by the President of each of said colleges shall be made to the Secretary of Agriculture, as well as to the Secretary of the Interior, regarding the condition and progress of each college, including statistical information in relation to its receipts and expenditures, its library, the number of its students and professors, and also as to any improvements and experiments made under the direction of any Experimental Stations attached to said colleges, with their costs and results, and such other industrial and economical statistics as may be regarded as useful, one copy of which shall be transmitted by mail to all other colleges further endowed under this Act.

SEC. 4. That on or before the first day of July in each year, after the passage of this Act, the Secretary of the Interior shall ascertain and certify to the Secretary of the Treasury as to each State and Territory, whether it is entitled to receive its share of the annual appropriation for colleges, or of institutions for colored students, under this Act, and the amount which thereupon each is entitled respectively, to receive. If the Secretary of the Interior shall withhold a certificate from any State or Territory of its appropriation the facts and reasons therefor shall be reported to the President, and the amount involved shall be kept separate in the treasury until the close of the next Congress, in order that the State or Territory may, if it should so desire, appeal to Congress from the determination of the Secretary of the Interior. If the next Congress shall not direct such sum to be paid it shall be covered into the treasury. And the Secretary of the Interior is hereby charged with the proper administration of this law.

SEC. 5. That the Secretary of the Interior shall annually report to Congress the disbursements which have been made in all the States and Territories, and also whether the appropriation of any State or Territory has been withheld, and if so, the reasons therefor.

SEC. 6. Congress may at any time amend, suspend or repeal any or all of the provisions of this Act.

Approved August 30, 1890.

State Laws Relating to the College

In November, 1889, the General Assembly passed the following law, authorizing the establishment of the Clemson Agricultural College of South Carolina:

SECTION 1300. The Honorable Thomas G. Clemson having departed this life on the sixth day of April, A. D. 1888, leaving of force his last will and testament, which was duly admitted to probate on the twentieth day of April, 1888, in the office of the Judge of Probate of the County of Oconee, in the State of South Carolina, wherein he devised and bequeathed to his executor, Richard W. Simpson, of Pendleton, South Carolina, a tract of land situated on Seneca River, in Oconee County, in said State, containing eight hundred and fourteen acres, more or less, known as the Fort Hill plantation, as well as all his other property, both real and personal, except certain legacies in the said will mentioned and provided for, all in trust to convey to the State of South Carolina when the said State shall accept the same for the purpose of establishing and maintaining an Agricultural and Mechanical College upon the aforesaid Fort Hill plantation upon the terms and conditions of said will, the State of South Carolina hereby expressly declares that it accepts the devise and bequest of Thomas G. Clemson subject to the terms and conditions set forth in his last will and testament, and the Treasurer of the State is hereby authorized and empowered to receive and securely hold the said property, both real and personal, and to execute all necessary papers and receipts therefor as soon as the said executor shall convey and transfer the said devise and bequest to the State.

SEC. 1301. The deed and transfer of said property to the State having been duly executed and made by the said executor, in accordance with the provisions of said will, an Agricultural and Mechanical College in connection with the aforesaid devise and bequest, to be styled "The Clemson Agricultural College of South Carolina," and situated at Fort Hill, in Oconee County, on the plantation so devised; in which College shall be taught all branches of study pertaining to practical and scientific agriculture and other industries connected therewith, and such other studies as are not inconsistent with the terms of the said will.

SEC. 1302. The said College shall be under the management and control of a Board of thirteen Trustees composed of the seven members nominated by said will and their successors and six members to be elected by the Legislature in Joint Assembly.

SEC. 1308. One-half of the Land Scrip Fund heretofore vested by Section 1045 of the General Statutes (1882) in the Board of Trustees of the University of South Carolina is hereby vested in the six members of the Board of Trustees of the Clemson Agricultural College elected by the General Assembly; and the State Treasurer is authorized and required to issue a certificate of State stock in the sum of ninety-five thousand nine hundred dollars, bearing interest at the rate of six per centum per annum, payable semi-annually, to the said six members of the said Board of Trustees, to be held as a perpetual fund, the capital of which shall forever remain undiminished, the income of said fund to be used by said Board of Trustees for the building and maintenance of the said Clemson Agricultural College, in accordance with the purposes for which the said Land Scrip was donated by the Act of Congress in relation thereto.

SEC. 1309. The annual grant of fifteen thousand dollars, commonly known as the Hatch Bill fund, made to the State of South Carolina by the Congress entitled "An Act to establish agricultural experiment stations in connection with the colleges established in the several States under the provisions of an Act approved July second, eighteen hundred and sixty-two, and of the Act supplementary thereto," approved March 2d, 1887, shall be and hereby is, withdrawn from the control of the Board of Trustees of the University of South Carolina, in whom it was vested by an Act entitled "An Act to amend Chapter XX. of the General Statutes, entitled 'Of the University of South Carolina,'" approved December 22, 1887; and the said grant of fifteen thousand dollars is hereby vested in the six members of the Board of Trustees of the Clemson Agricultural College of South Carolina chosen by the General Assembly; and an agricultural experiment station shall be established in connection with the said Clemson Agricultural College, and under the direction of the Board of Trustees thereof, to be supported by said grant according to the provisions of the Act of Congress hereinbefore mentioned.

SEC. 1310. The Department of Agriculture of this State, as heretofore constituted and provided for by law, is abolished, and also the office of Commissioner of Agriculture for this State.

SEC. 1311. All the powers, duties, rights and privileges heretofore vested in and exercised by the Commissioner of Agriculture and the Department of Agriculture of this State are hereby vested in and devolved upon the Board of Trustees of the Clemson Agricultural

College of South Carolina, except that said Board shall not have any rights, powers or privileges in reference to or in connection with the management and control of the rights and interests of the State in the phosphate rock or phosphatic deposits in the navigable streams and marshes thereof.

SEC. 1319. All the privilege tax on fertilizers heretofore required to be paid to the Commissioner of Agriculture shall in the future be paid to the Treasurer of the State, subject to the order of the Board of Trustees of the Clemson Agricultural College of South Carolina; and so much of the money so received as shall be necessary to defray the expenses of the Board in performing the duties now by this Chapter devolved upon them shall be thus used, and the balance shall go to the said College, for its erection and maintenance.

SEC. 1320. A municipal corporation is hereby created, known as Clemson College, the limits of which shall consist of all the lands belonging to the said College and cover all the territory included in a circle formed with the College building as a center, with a radius of five miles, thus making the diameter of the circle ten miles, within which boundaries the jurisdiction of the corporation shall extend. No dispensary shall ever be located at Calhoun.

The General Assembly also passed the following law in reference to the appropriation made by Congress under the provisions of the Act approved August 30th, 1890:

SEC. 1299. All sums which shall be received by the State from the United States Government, under the provisions of the Act of Congress approved August 30th, 1890, entitled "An Act to apply a portion of the public lands to the more complete endowment and support of colleges for the benefit of agriculture and mechanic arts established under the provisions of an Act of Congress approved July 2d, 1862," shall be equally divided between the Colored Normal and Industrial College and Clemson Agricultural College to the purposes specified in said Act.

AN ACT to provide for Beneficiary Scholarships in the Clemson Agricultural College of South Carolina.

SECTION 1. *Be it enacted by the General Assembly of the State of South Carolina*, That there are hereby established and created one hundred and twenty-four (124) beneficiary scholarships in the Clemson Agricultural College of South Carolina, and each of said scholarships shall be of the value of one hundred dollars per annum, and shall be apportioned and distributed among the several Counties of the State in the same manner as the Members of the House of Representatives are apportioned, so that each County shall have as many scholarships as such County is entitled to Members in the House of Representatives.

SEC. 2. That the said scholarships shall be awarded by the State Board of Education, upon the recommendation of the County Boards of Education of the several Counties, to the most worthy and needy young men of such age as is fixed by the Board of Trustees of said College for other students, who shall have passed an approved entrance examination upon the common school branches and made at least sixty per cent. upon such examination; and preference shall be given to those young men who desire to take the agricultural course.

SEC. 3. The questions for such examinations shall be prepared by the President or some member or members of the Faculty of the said Clemson Agricultural College, under the direction of the President, and shall be forwarded to the respective County Boards of Education on or before the 15th day of July in each year, together with a statement showing the number of vacant scholarships to which each County is entitled; and the said County Board of Education shall hold the said examinations and thereafter read and grade the examination papers of all applicants and forward the same to the State Board of Education with their recommendations as to the award of the scholarships.

SEC. 4. That before applying for the said scholarships, applicants shall make proof under oath to their respective County Boards of Education, as required by law for scholarships in the South Carolina Military Academy, of their financial inability to attend college, before they shall receive from said Board permission to stand such examination.

SEC. 5. That said scholarships shall be paid from the regular income of said Clemson Agricultural College as now provided by law,

and shall each continue for the term of four years, or for such length of time as the beneficiary shall be able to maintain himself and comply with the rules of the College; and the said sum of one hundred dollars per annum shall be placed to the credit of each of said beneficiaries, and applied towards the payment of his board and other necessary school expenses.

SEC. 6. That this Act shall go into effect from and after the first day of July, A. D. 1904.

Approved the 25th day of February, A. D. 1904.

Graduates 1896-1904.

Below are given the occupations and addresses of the alumni, so far as ascertainable at the College, although in several instances, as indicated, these are not positively known. This preliminary and imperfect list is published here, however, in the hope that it may serve as an aid in the preparation of a complete record of all alumni from the time of graduation, which it is the purpose of the College to compile and publish from time to time in pamphlet form. Graduates, former students, and friends of the institution are requested to co-operate in making this record as nearly complete as possible and in the effort to keep it constantly up to date. The graduates themselves are specially urged to send notice promptly of all changes of occupation or address, promotions, honors, etc.

Information for this record should be addressed to Prof. G. Shanklin, Registrar, Clemson College, S. C.

[NOTE.—Courses pursued are indicated by initials in parentheses: A, agricultural; C, civil engineering; M, mechanical-electrical; T, textile. The numbers accompanying these show years of graduation.]

ADAMS, W. G. (C '00), Civil Engineer, with W. C. Whitner, High Falls, Ga.

ALFORD, N. H. (T '03), Instructor in Manual Training, City Schools, Marion, S. C.

ALL, JOHN E. (A '00), S. B. T. Seminary, Louisville, Ky.

ALL, PERCY H. (M '01), No. 120 W. Hull St., Savannah, Ga.

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- WELLS, CLAUDE H. (A '00), Med. Student, Charleston Med.
College, Charleston, S. C.
- WERTS, LEROY A. (A '96), Sec. Belton Cotton Mills, Belton,
S. C.
- WHITE, H. S. (M '04), City Power & Lighting Co., Talla-
hassee, Fla.
- WHITNEY, J. B. (T '03), Cotton Dealer, Augusta, Ga.
- WIER, J. A. (M '04), Nernst Lamp Co., Pittsburg, Pa.
- WIGGINS, GORDON (A '98), Farmer, Holly Hill, S. C.

- WIGHTMAN, W. M. (M '03), N. Y. Telephone Co., New York, N. Y.
- WILLIAMS, J. F. (T '04), Teaching, Easley, S. C.
- WILLIAMS, R. G., JR. (T '03), Lumber Business, Newberry, S. C.
- WILLIAMS, V. McB. (T '04), with Williams Hardware Co., Greenville, S. C.
- WILSON, H. A. (M '02), Mgr. Climax Electrical Supply and Construction Co., Bluefields, W. Va.
- WISE, J. T. (M '98), Torpedo Station, Newport, R. I.
- WYLIE, J. C. (M '03), Electrical Draftsman, Navy Dept., Washington, D. C.
- WYSE, J. H. (C '03), Civil Engineer, R. R. in Virginia.
- YOUNG, T. B. (A '03), Drug and Medicinal Plant Investigation, Dept. of Agr., Ebenezer, S. C.
- ZIEGLER, M. E. (A '02), Law Student, Private Sec. to Congressman Lever, Washington, D. C.

Students, 1904-1905.

Senior Class

NAME	COURSE	COUNTY
E. P. Alford	Civil	Florence
C. P. Ballenger	Civil	Oconee
H. W. Barre	Agri.	Lexington
W. S. Beaty	Text.	Anderson
L. E. Boykin	Agri.	Darlington
Judson Brodie	Text.	Aiken
J. C. L. Caldwell	Mech. Elec.	Abbeville
F. E. Cope	Text.	Orangeburg
H. W. Crouch, Jr.	Civil	Charleston
E. B. Dibble	Mech. Elec.	Charleston
T. K. Elliott	Mech. Elec.	Fairfield
R. P. Evans, Jr.	Mech. Elec.	Charleston
A. A. Gandy	Text.	Darlington.
J. C. Goggans, Jr.	Mech. Elec.	Newberry
R. F. Gooding	Mech. Elec.	Fairfield
J. M. Jenkins	Agri.	Charleston
C. P. Josey	Mech. Elec.	Darlington
B. O. Kennedy	Mech. Elec.	Kershaw
F. W. Lachicotte, Jr.	Mech. Elec.	Georgetown
C. E. A. Lathrop	Mech. Elec.	Orangeburg
B. F. Lee	Mech. Elec.	Anderson
C. J. Lemmon	Agri.	Lee
R. L. Link	Mech. Elec.	Abbeville
E. R. McIver	Agri.	Darlington
M. L. Murph	Civil	Orangeburg
C. H. Newman	Mech. Elec.	Chesterfield
J. G. Parks	Civil	Edgefield
E. E. Porter	Metallurgy	Cherokee
J. C. Richardson, Jr.	Mech. Elec.	Hampton
J. W. Ruff	Mech. Elec.	Charleston
M. B. Sams	Text.	Cherokee
C. C. Schirmer, Jr.	Mech. Elec.	Charleston
J. R. S. Siau, Jr.	Mech. Elec.	Georgetown
L. P. Slattery	Civil	Greenville

NAME	COURSE	COUNTY
Simon Sorentrue	Mech. Elec.	Orangeburg
A. J. Speer	Mech. Elec.	Abbeville
D. B. Swygert	Mech. Elec.	Laurens
W. H. Taylor	Civil	Oconee
C. Webb	Mech. Elec.	Greenwood
W. S. Weston	Mech. Elec.	Richland
W. H. Wise	Civil	Barnwell
F. C. Wyse	Civil	Richland

Junior Class

C. B. Abell	Civil	Chester
D. G. Adams	Civil	Darlington
P. H. Adams	Mech. Elec.	Greenwood
F. Auld	Mech. Elec.	Greenwood
J. H. Barksdale	Mech. Elec.	Greenwood
T. F. Barton, Jr.	Mech. Elec.	Orangeburg
W. S. Baskin	Mech. Elec.	Abbeville
W. Beckett	Mech. Elec.	Charleston
O. H. Bissell, Jr.	Civil	Charleston
J. C. Boesch	Mech. Elec.	Charleston
J. A. Brice, Jr.	Mech. Elec.	Fairfield
A. L. Brunson, Jr.	Civil	Edgefield
J. C. Brunson	Mech. Elec.	Florence
I. W. Bull	Civil	Orangeburg
A. F. Byars	Agri.	Marion
S. W. Cannon	Mech. Elec.	Newberry
D. F. Cherry	Civil	Charleston
A. F. Cleveland	Agri.	Spartanburg
C. Coles	Mech. Elec.	Richland
E. P. Crouch	Civil	Charleston
O. L. Derrick	Text.	Lexington
L. C. Dickson	Text.	Mecklenburg, N. C.
A. P. DuBose	Mech. Elec.	Kershaw
F. M. Dwight, Jr.	Mech. Elec.	Sumter
A. G. Ellison	Agri.	Fairfield
T. R. Ellison	Mech. Elec.	Fairfield
A. L. Ervin	Civil	Florence
J. A. Gelzer	Mech. Elec.	York

NAME	COURSE	COUNTY
J. R. Godley	Mech. Elec.	Colleton
T. L. Goodwin	Civil	Anderson
C. A. Grainger	Text.	Horry
S. P. Harper	Mech. Elec.	Williamsburg
E. T. Heyward	Mech. Elec.	Charleston
D. H. Hill	Agri.	Abbeville
L. R. Hoyt	Civil	Sumter
T. B. Jacobs	Agri.	Lexington
H. S. Jenkins	Civil	Barnwell
J. E. Johnson	Agri.	Florence
S. L. Johnson	Text.	Charleston
E. H. Jones	Mech. Elec.	Abbeville
W. A. Keenan	Mech. Elec.	Richland
T. E. Keitt	Agri.	Oconee
J. Klinck	Text.	Charleston
W. J. Latimer	Text.	Abbeville
J. Lucas	Civil	Spartanburg
A. R. McAliley	Mech. Elec.	Chester
J. H. McClain	Agri.	Spartanburg
J. McCrady	Mech. Elec.	Charleston
C. W. Mack	Mech. Elec.	Orangeburg
C. McLaurin	Agri.	Marlboro
F. B. McLaurin	Text.	Marlboro
L. B. Martin	Agri.	Oconee
A. A. Merrick	Mech. Elec.	Oconee
W. C. Moore	Agri.	Lee
J. M. Moss, Jr.	Agri.	Orangeburg
J. J. O'Hagan	Civil	Charleston
J. V. Phillips	Civil	Cherokee
W. A. Putnam, Jr.	Mech. Elec.	Laurens
J. J. Rauch	Text.	Saluda
J. H. Reid	Civil	Anderson
S. F. Reid	Agri.	Abbeville
K. O. Rinehart	Mech. Elec.	Saluda
F. M. Routh	Mech. Elec.	Oconee
W. A. Sanders	Civil	Anderson
M. A. Savage	Mech. Elec.	Colleton
H. W. Schumpert	Mech. Elec.	Newberry
W. R. Smith	Mech. Elec.	Charleston

NAME	COURSE	COUNTY
L. G. Southard	Agri.	Union
T. E. Stokes	Agri.	Darlington
H. P. Stuckey	Agri.	Darlington
J. C. Summers	Agri.	Orangeburg
F. K. Sweeny	Civil	Spartanburg
F. E. Thomas, Jr.	Mech. Elec.	Sumter
W. C. Thompson	Civil	Anderson
L. W. Walker	Mech. Elec.	Clarendon
S. L. Webb	Civil	Charleston
W. P. White	Mech. Elec.	Beaufort
T. H. J. Williams, Jr.	Mech. Elec.	Charleston
R. Y. Winters	Agri.	Darlington
T. H. Winters	Text.	Darlington
J. L. Woodroof	Civil	Chatham, Ga.
J. N. Wright	Mech. Elec.	Laurens

Sophomore Class

D. Alexander	Agri.	Spartanburg
A. J. Allen	Mech. Elec.	Marlboro
R. L. Allston	Agri.	Georgetown
W. B. Aull	Agri.	Anderson
J. B. Bailey	Mech. Elec.	Greenwood
M. H. Banks	Mech. Elec.	Orangeburg
A. V. Bethea	Agri.	Marion
T. L. Bissell	Mech. Elec.	Charleston
L. R. Boggs	Mech. Elec.	Pickens
F. Bolt	Civil	Anderson
S. I. Bond	Agri.	Beaufort
L. C. Boone	Civil	Orangeburg
H. C. Brawley	Text.	Chester
T. N. Bristow	Mech. Elec.	Marlboro
A. K. Britt	Mech. Elec.	Abbeville
J. J. Brown	Agri.	Spartanburg
J. Carson Brunson	Mech. Elec.	Florence
J. M. Bryan	Text.	Charleston
F. C. Bryant	Agri.	Orangeburg
F. J. Burriss	Agri.	Anderson
C. W. Busch	Mech. Elec.	Aiken

NAME	COURSE	COUNTY
A. L. Campbell	Civil	Hampton
E. P. Campbell	Text.	Dorchester
W. E. Campbell	Civil	Beaufort
J. P. Carey, Jr.	Agri.	Pickens
B. D. Carter	Agri.	Colleton
R. F. Cason	Mech. Elec.	Anderson
J. C. Clark	Agri.	Marion
F. A. Connor	Mech. Elec.	Greenwood
E. A. Crawford	Agri.	York
H. C. Crews	Mech. Elec.	Greenwood
H. C. Crum	Agri.	Richland
G. D. Curtis	Civil	Georgia
F. P. Cuthbert	Agri.	Dorchester
R. E. Dalton	Civil	Greenville
J. S. Darby, Jr.	Mech. Elec.	Chester
J. P. Darden, Jr.	Text.	Spartanburg
S. L. Dreher	Agri.	Marion
L. E. Dew	Agri.	Lexington
J. B. Duckett	Text.	Anderson
J. W. Duckett	Civil	Greenwood
C. E. Durant	Civil	Colleton
T. D. Eason	Agri.	Charleston
R. A. Easterling	Mech. Elec.	Barnwell
J. Ehrhardt	Mech. Elec.	Bamberg
L. E. Fitzsimons	Civil	Charleston
G. H. Folk	Mech. Elec.	Newberry
D. M. Fraser	Civil	Barnwell
R. F. Fraser	Civil	Georgetown
F. M. Furtick	Mech. Elec.	Lexington
E. V. Garrett	Civil	Laurens
H. E. Giles	Mech. Elec.	Greenwood
R. G. Harris	Agri.	Laurens
A. S. Heyward	Mech. Elec.	Chatham, Ga.
J. W. Hicklin	Mech. Elec.	Chester
J. G. Holland	Mech. Elec.	Edgefield
D. S. Hollis	Agri.	Chester
A. V. Hooks	Civil	Horry
L. S. Horton	Mech. Elec.	Anderson
P. LaV. Howle	Agri.	Darlington

NAME	COURSE	COUNTY
J. S. Hughes	Agri.	Edgefield
C. E. Jones	Agri.	Lexington
G. R. Jones	Mech. Elec.	Sumter
E. M. Kaminer	Agri.	Richland
J. W. Keele	Agri.	Barnwell
E. H. Kinsler	Mech. Elec.	Richland
A. M. Klugh	Agri.	Greenwood
W. A. Latimer, Jr.	Civil	Chester
S. L. Lebby	Mech. Elec.	Charleston
R. H. Lemmon	Agri.	Fairfield
P. Lykes	Agri.	Richland
J. M. McCown	Mech. Elec.	Anderson
E. O. McCreight, Jr.	Mech. Elec.	Kershaw
E. D. McCutchan	Mech. Elec.	Sumter
J. W. McLendon	Agri.	Florence
J. McC. Massey	Mech. Elec.	York
J. M. Miller	Mech. Elec.	Lexington
W. C. Moore	Agri.	Oconee
H. P. Moses	Mech. Elec.	Sumter
R. G. Owens	Mech. Elec.	Anderson
S. McC. Pennel	Civil	Abbeville
L. W. Perrin, Jr.	Mech. Elec.	Abbeville
S. R. Perrin	Text.	Union
D. B. Peurifoy, Jr.	Agri.	Saluda
H. A. Phelps	Mech. Elec.	Lexington
M. M. Platt	Agri.	Berkeley
E. B. Plenge	Mech. Elec.	Charleston
C. T. Pottinger	Mech. Elec.	Chatham, Ga.
P. Quattlebaum	Mech. Elec.	Horry
T. F. Ray, Jr.	Text.	Laurens
O. M. Reid	Mech. Elec.	Anderson
R. A. Reid	Mech. Elec.	Anderson
R. G. Richardson	Civil	Beaufort
R. L. Riggs	Civil	Charleston
T. G. Robertson	Mech. Elec.	Laurens
L. B. Rogers	Agri.	Marion
G. DuP. Sanders	Agri.	Barnwell
E. L. Saunders	Mech. Elec.	York
W. L. Schachte	Mech. Elec.	Charleston

NAME	COURSE	COUNTY
F. B. Schirmer	Mech. Elec.	Charleston
R. L. Scott	Agri.	Edgefield
W. O. Scott	Agri.	Edgefield
M. T. Scruggs	Mech. Elec.	Fairfield
E. M. Shingler	Mech. Elec.	Charleston
J. A. Simmons	Text.	Laurens
H. P. Sitton, Jr.	Civil	Anderson
L. S. Sitton	Text.	Anderson
W. P. Sloan	Agri.	Anderson
J. M. Smith	Civil	Anderson
P. W. Spencer	Agri.	York
W. C. Sproles	Mech. Elec.	Greenwood
F. M. Stephenson	Mech. Elec.	Lancaster
W. H. Stevens	Agri.	Greenville
W. L. Stone	Mech. Elec.	Colleton
H. K. Sullivan	Mech. Elec.	Anderson
J. W. Sullivan	Agri.	Anderson
A. B. Taylor	Mech. Elec.	Pickens
J. S. Taylor	Agri.	Oconee
R. T. Taylor	Agri.	Anderson
R. R. Tolbert	Agri.	Greenwood
J. E. Traxler	Agri.	Florence
C. W. Wannamaker	Civil	Orangeburg
W. W. Wannamaker	Agri.	Orangeburg
W. P. Watkins	Mech. Elec.	Anderson
W. W. Webb	Civil	Anderson
P. E. Wilbur	Civil	Charleston
L. S. Wolfe, Jr.	Agri.	Orangeburg
O. D. Wood	Mech. Elec.	Greenville
M. A. Woods	Mech. Elec.	Clarendon
W. H. Wylie, Jr.	Mech. Elec.	York
S. T. Zemp	Mech. Elec.	Kershaw

Freshman Class

M. H. Ackerman	Agri.	Colleton
W. Adams	Mech.	Greenville
H. W. All	Agri.	Barnwell
T. S. Allen	Mech.	Abbeville

NAME	COURSE	COUNTY
B. L. Allsbrook	Mech.	Horry
J. E. Alverson	Agri.	Spartanburg
M. C. Antley	Mech.	Orangeburg
S. E. Bailes	Agri.	Lancaster
A. J. Baker	Agri.	Horry
C. M. Baker	Agri.	Spartanburg
D. N. Baker	Mech.	Florence
A. T. Beaver	Mech.	Richmond, Ga.
G. D. Bellinger, Jr.	Mech.	Barnwell
J. F. Belue	Agri.	Cherokee
M. W. Belue	Agri.	Cherokee
A. P. Bethea	Agri.	Marion
J. A. Bethea	Agri.	Florence
J. O. Bethea	Mech.	Marlboro
D. L. Bissell	Agri.	Charleston
W. W. Blair	Mech.	York
R. E. Blake	Agri.	Abbeville
S. C. Blease	Agri.	Saluda
B. Boggs	Mech.	Pickens
J. L. Boyd	Mech.	Laurens
W. F. Bradburn	Mech.	Newberry
D. C. Britt	Mech.	Abbeville
A. E. Brock	Mech.	Clarendon
B. St. L. Brooks	Mech.	Greenwood
E. B. Brown	Agri.	Anderson
W. W. Brown	Mech.	Clarendon
H. H. Brunson	Agri.	Orangeburg
R. W. Bryan	Mech.	Georgetown
H. E. Bunch	Agri.	Spartanburg
A. F. Butler	Mech.	Colleton
W. C. Camp	Mech.	Cherokee
C. L. Cannon	Agri.	Newberry
R. B. Carpenter	Mech.	Pickens
J. K. Carwile	Mech.	Abbeville
F. P. Caughman	Agri.	Richland
H. S. Chapman	Agri.	Lexington
C. C. Chavous	Mech.	Barnwell
W. E. Cheatham	Mech.	Greenwood
A. W. Cherry	Agri.	Orangeburg

NAME	COURSE	COUNTY
W. R. Clardy	Agri.	Anderson
J. S. H. Clarkson	Agri.	Richland
C. G. Clinkscales	Agri.	Abbeville
S. Coles	Mech.	Polk, N. C.
W. W. Couliette	Mech.	Clarendon
B. H. Covington	Agri.	Marlboro
H. K. Covington	Agri.	Marlboro
H. E. Cranford	Mech.	Union
W. H. G. Crawford	Agri.	Anderson
F. J. Crider	Agri.	Orangeburg
F. W. Crisp	Agri.	Laurens
W. H. Cunningham	Mech.	Lancaster
J. R. Davis	Mech.	Laurens
R. C. Dick	Mech.	Kershaw
C. G. Dorman	Mech.	Spartanburg
C. O. Dougherty	Mech.	Orangeburg
W. B. Dowling	Agri.	Hampton
R. B. DuPree	Agri.	Laurens
J. H. Earle	Agri.	Pickens
W. L. Easterlin	Mech.	Colleton
P. T. Easterling	Mech.	Marlboro
L. C. Eidson	Mech.	Newberry
P. B. Ellis	Mech.	Greenwood
J. M. Ervin	Agri.	Darlington
W. C. Ervin	Agri.	Florence
W. J. Evans	Mech.	Abbeville
B. B. Ezell	Agri.	Spartanburg
S. J. Ezell	Agri.	Spartanburg
J. L. Farmer	Mech.	Anderson
I. O. Field	Agri.	Pickens
R. H. Fike	Agri.	Spartanburg
D. P. Folke	Mech.	Bamberg
W. E. Freeman	Mech.	Pickens
H. H. Fuller	Agri.	Laurens
M. J. Funchess	Agri.	Orangeburg
R. E. Gaines	Mech.	Pickens
W. A. Gantt	Agri.	Aiken
W. M. Garlington	Mech.	Newberry
T. M. Garrett	Mech.	Pickens

NAME	COURSE	COUNTY
F. N. Garrison	Agri.	Pickens
P. McD. Gee	Mech.	Union
N. P. Gee	Agri.	Union
J. H. Gibbes	Agri.	Richland
M. M. Glasser	Mech.	Charleston
J. F. Glover	Mech.	Orangeburg
J. D. Goldsmith	Agri.	Greenville
J. P. Gossett	Mech.	Anderson
J. D. Graham	Mech.	Sumter
R. T. Graham	Agri.	Lexington
H. L. Grainger	Agri.	Horry
L. H. Habenicht	Mech.	Fairfield
T. Hamilton, Jr.	Agri.	Hampton
G. A. Hanna	Mech.	Hampton
J. H. Harvey	Agri.	Berkeley
A. R. Happoldt	Mech.	Charleston
D. N. Harris	Mech.	Richland
W. R. Hawkins	Mech.	Greenville
M. W. Hellams	Agri.	Laurens
W. N. Henderson	Mech.	Greenwood
T. C. Heyward	Mech.	Beaufort
M. R. Hirsch	Mech.	Charleston
J. Hough, Jr.	Agri.	Kershaw
S. M. Howard	Mech.	Greenville
H. H. Huggins	Agri.	Clarendon
B. G. Hunter	Mech.	Anderson
E. L. Hutchins	Mech.	Pickens
K. M. James	Agri.	Darlington
C. C. Johnson	Agri.	Spartanburg
E. M. Jones	Mech.	Sumter
G. F. Kaigler	Mech.	Lexington
A. L. Keasler	Mech.	Anderson
A. G. Kennedy	Mech.	Union
T. P. Kennedy	Mech.	Union
M. R. Kimbrell	Mech.	York
W. A. Kirby	Mech.	Colleton
W. M. Kirby	Mech.	Abbeville
W. W. Kirven	Agri.	Darlington
W. W. Kirk	Mech.	Abbeville

NAME	COURSE	COUNTY
E. S. Kohn	Mech.	Newberry
J. C. LaBorde	Agri.	Richland
J. J. LaRoche	Mech.	Charleston
J. T. Latimer	Agri.	Abbeville
A. C. Lee	Mech.	Anderson
J. P. Lewis, Jr.	Mech.	Oconee
J. W. Lewis	Agri.	Horry
S. C. Little	Mech.	Spartanburg
J. C. Littlejohn	Mech.	Union
F. A. Lown	Agri.	Lexington
R. B. Lowry	Agri.	Chester
J. E. Lunn	Agri.	Florence
W. M. Lunn	Agri.	Florence
N. Lykes	Agri.	Richland
L. C. Lynch	Mech.	Spartanburg
W. A. Mace	Agri.	Marion
P. W. Major	Agri.	Anderson
C. W. Marston	Mech.	Henrico, Va.
F. L. Martin	Agri.	Horry
G. C. Martin	Agri.	Richland
G. T. Martin	Agri.	Pickens
L. E. May	Agri.	Charleston
W. H. Maynard	Agri.	Greenwood
W. G. Mazyck, Jr.	Mech.	Charleston
A. B. Means	Mech.	Anderson
L. B. Merritt	Mech.	Anderson
A. L. Moore	Agri.	Laurens
C. L. Moore	Mech.	York
E. Morris	Mech.	Pickens
P. A. Murray, Jr.	Mech.	Charleston
C. McCaslan	Mech.	Greenwood
J. E. McFadden	Mech.	Lee
F. McFall	Mech.	Pickens
J. T. McLane	Agri.	Abbeville
J. N. McLaurin	Agri.	Kershaw
C. E. McLean	Agri.	Chesterfield
C. A. McLendon	Agri.	Lee
J. McG. Napier	Agri.	Marlboro
O. W. Newman	Agri.	Chesterfield

NAME	COURSE	COUNTY
A. R. Nicholson	Mech.	Fairfield
J. G. O'Bryan	Agri.	Williamsburg
T. L. Ogier, Jr.	Agri.	Charleston
B. Oliver	Mech.	Darlington
T. V. Padgett	Agri.	Saluda
O. N. Page	Mech.	Marion
J. R. Pennell	Mech.	Anderson
F. D. Phillips	Mech.	Charleston
J. A. Phillips	Agri.	Orangeburg
F. C. Poag	Mech.	Lancaster
R. O. Poag	Mech.	York
W. O. Pratt	Mech.	Greenwood
J. E. Reaves	Mech.	Marion
H. Reed, Jr.	Mech.	Spartanburg
G. Reed	Mech.	Lee
E. B. Reeves	Mech.	Charleston
C. W. Rice	Agri.	Bamberg
L. G. Richardson	Agri.	Barnwell
H. B. Riser	Mech.	Laurens
H. L. Rivers	Mech.	Greenwood
W. J. Roach	Agri.	York
O. Roper	Agri.	Marlboro
W. McL. Rosborough	Mech.	Chester
T. L. Ross	Agri.	Darlington
W. H. Rumff	Agri.	Orangeburg
J. B. Ryan	Agri.	Sumter
M. L. Sandifer	Agri.	Bamberg
W. H. Scott	Agri.	Edgefield
R. G. Sessions	Agri.	Horry
F. H. Sheely	Mech.	Newberry
S. H. Sherard	Agri.	Greenwood
B. F. Shockley	Mech.	Spartanburg
E. H. Shuler	Mech.	Aiken
J. H. Silcox	Mech.	Charleston
J. W. M. Simmons, Jr.	Mech.	Newberry
J. B. Simpson	Mech.	Anderson
W. D. Simpson, Jr.	Mech.	Anderson
A. L. Smith	Agri.	Marion
F. W. Smith	Mech.	Marion

NAME	COURSE	COUNTY
C. Sorentrue	Mech.	Orangeburg
G. W. Speer, Jr.	Agri.	Abbeville
J. Spratt	Mech.	Chester
W. B. Stanley	Mech.	Richland
K. E. Stello	Mech.	Charleston
C. LeR. Stevens	Agri.	Berkeley
H. K. Strickland	Agri.	Colleton
A. C. Summers	Agri.	Orangeburg
S. Swygert	Agri.	Laurens
W. K. Tarvel, Jr.	Mech.	Charleston
W. A. Thomas	Agri.	Marlboro
L. C. Thompson	Agri.	Richland
W. K. Thompson, Jr.	Agri.	Kershaw
E. J. Thornhill	Agri.	Dorchester
D. L. Tindal	Agri.	Clarendon
B. R. Todd	Mech.	Laurens
C. M. Tripp	Mech.	Anderson
C. M. Trott, Jr.	Mech.	Charleston
G. M. Truluck	Agri.	Sumter
H. M. Turner	Mech.	Laurens
M. C. Vallentine	Mech.	Orangeburg
H. E. Vincent	Mech.	Hampton
D. V. Walker, Jr.	Mech.	Fairfield
J. L. Walker	Agri.	Clarendon
W. E. Walters	Mech.	Greenville
W. P. Wannamaker	Agri.	Orangeburg
G. S. Ward	Mech.	Georgetown
G. Warren	Agri.	Colleton
T. G. Watkins	Mech.	Anderson
F. N. Watson	Mech.	Anderson
L. O. Watson	Agri.	Greenwood
G. G. Weathersbee	Agri.	Aiken
W. W. Welch	Agri.	Colleton
W. N. Wells	Agri.	Lee
M. Wescoat	Mech.	Dorchester
J. S. Wessinger	Agri.	Lexington
J. T. Weston*	Agri.	Richland
E. R. Wheler	Agri.	Darlington
C. L. White	Agri.	Laurens

NAME	COURSE	COUNTY
F. L. Whitlock	Mech.	Chester
H. L. Wightman	Mech.	Greenwood
H. C. Wilburn	Agri.	Union
J. A. Williams	Mech.	Pickens
M. G. Williams	Mech.	Pickens
S. Williams	Mech.	Greenville
C. L. Williamson, Jr.	Agri.	Sumter
J. E. Williamson	Mech.	Sumter
M. C. Willis	Mech.	York
J. N. Willoughby	Mech.	Florence
F. B. Wise	Agri.	Florence
W. R. Woodward	Agri.	Barnwell
E. H. Wyman, Jr.	Mech.	Aiken
W. T. Yarborough	Agri.	Fairfield

Preparatory Class

NAME	COUNTY
T. Ancrum	Kershaw
G. C. Andell	Charleston
W. S. Arrington	Greenwood
R. M. Bailey.....	Anderson
B. F. Ballew, Jr.....	Laurens
C. E. Baldwin	Greenville
G. M. Barnett	Oconee
F. M. Barton	Anderson
W. A. Barton	Greenville
J. J. Beshere	Charleston
B. L. Bomar	Spartanburg
J. R. Blair	York
S. W. Bowen	Pickens
W. C. Boylston	Aiken
L. B. Brandon	York
T. L. Brice	Fairfield
C. R. Brockinton	Williamsburg

NAME	COUNTY
W. J. Brockinton	Williamsburg
E. M. Brown	Charleston
G. N. Bunch	Aiken
M. Burnett	Spartanburg
O. G. Burriss	Anderson
C. D. Bushardt, Jr.	Newberry
LeR. H. Butler	Georgetown
J. W. Caldwell	Newberry
A. M. Campbell	Charleston
J. A. Campbell	Dorchester
J. E. Clark	Clarendon
W. Clark	Lee
E. D. Clement	Charleston
I. N. Colclough	Clarendon
R. Coleman	Fairfield
E. L. Collins	Spartanburg
J. C. Cornwell	Chester
J. A. S. Counts	Newberry
J. C. Covington	Marlboro
L. S. Crawford	Berkeley
W. L. Cromer	Newberry
W. A. Couper	Spartanburg
W. S. DesPortes	Fairfield
G. N. Dickson	Oconee
W. A. Dickson	Oconee
J. L. Dove	Fairfield
J. W. DuFree	Laurens
E. Earle	Pickens
J. L. Eason	Charleston
J. F. Elrod	Anderson
T. W. Epps	Williamsburg
R. G. Ervin	Anderson

NAME	COUNTY
C. W. Fant	Anderson
N. A. Felton	Anderson
F. Flemming	Greenville
D. R. Freeman	Charleston
S. E. Frey	Spartanburg
G. C. Furtick	Lexington
S. T. Gallman	Newberry
S. B. Gandy	Darlington
J. Gantt	Aiken
F. L. Gandy	Darlington
F. L. Gentry	Spartanburg
S. O. Gilmer	Anderson
W. S. Goodman	Oconee
W. C. Goodman	Greenville
T. P. Grimball	Charleston
R. W. Hamel	Florence
W. W. Hames	Union
A. L. Harris	Spartanburg
J. C. Harrison.....	Colleton
W. A. Hardin, Jr.....	Chester
B. S. Harvin	Clarendon
W. C. Haynsworth	Florence
J. F. Hodges	Greenville
T. G. Hope	York
H. C. Huffman	Richland
J. Iseman	Clarendon
F. M. Johnson	Colleton
R. L. Johnson	Greenville
R. G. Jones	Sumter
G. W. Keitt	Oconee
S. O. Kelley	Lee
V. E. Kohn	Newberry

NAME	COUNTY
R. R. LeMaster	Cherokee
J. D. Lemmon	Lee
J. P. Leslie	York
B. R. Lewis	Barnwell
O. Lewis	Marion
T. R. Littlejohn	Union
J. E. Mack	Orangeburg
D. A. Macaulay	Chester
A. R. Mitchell	Charleston
B. McQ. Montgomery	Williamsburg
R. D. Murray	Anderson
W. V. McCall	Marlboro
G. C. McCelvey	Abbeville
R. K. McClain	Spartanburg
J. I. McGee	Greenville
C. W. Neyle	Charleston
R. E. Nickles	Abbeville
C. P. Norris	Anderson
W. F. Odom	Barnwell
E. Page	Marion
B. L. Parnell	Darlington
C. H. Pennel	Abbeville
E. P. Porcher	Charleston
J. C. Pridmore	Cherokee
J. S. Pyatt	Georgetown
N. McL. Reed	Barnwell
B. T. Reeves	Laurens
J. C. Reid	Oconee.
A. J. Rigby	Clarendon
G. A. Robertson	Lancaster
C. A. Sanders	Beaufort
E. B. Sanders, Jr.....	Barnwell

NAME	COUNTY
H. Sanders	Chester
F. W. Schroder	Aiken
W. J. Sheely	Newberry
C. L. Shirley	Anderson
L. H. Siau	Georgetown
E. T. Simons	Berkeley
J. T. Sloan	Richland
G. E. Smith	Greenville
J. A. C. Tison.....	Hampton
M. Truluck	Sumter
M. L. Tyler	Aiken
J. H. Vallentine	Orangeburg
J. O. Vernon	Spartanburg
D. W. Watkins	Anderson
E. Weeks	Aiken
L. H. Weir	Fairfield
L. J. Welch	Union
R. P. Whitlock	Union
A. C. Whittle	Saluda
C. Y. Wigfall	Charleston
P. H. Wilkes	Chester
J. P. Williams	York
J. R. Williams	Charleston
C. L. Wilson	Laurens
J. H. Wilson	Chester
J. E. Wofford, Jr.....	Oconee
B. Wolff	Laurens
S. W. Wright	Laurens
J. Wylie	Chester
J. C. McWhorter	Anderson
A. Yates	Charleston
A. C. Young	Richland

Special Students

NAME

COUNTY

W. J. Blake (B. S., Davidson College), Textile...Abbeville
 R. G. Hemphill (College of Charleston), Civil Eng..Abbeville

Two-Year Course Textile Students

A. H. Agnew, 2d year.....Greenville
 C. H. Boyd, 1st year.....Cherokee
 W. L. Boyd, 1st year.....Mecklenburg, N. C.
 A. H. Cottingham, 1st year.....Marion
 V. V. Kendrick, 2d year.....Cherokee
 J. O. McCelvey 1st year.....Abbeville
 E. A. Prince, 2d year.....Anderson
 J. K. Simpson, 2d year.....Laurens

Irregular Students

J. J. Boazman Newberry
 J. B. Heyward Fulton, Ga.
 J. A. Killian, Jr.....Richland
 R. J. LeMaster Cherokee
 H. G. Lewis Oconee
 C. K. Pollitzer Beaufort
 W. R. Sammons Richland
 E. L. Stevenson Fairfield
 W. H. Thomas Greenville
 A. N. Whiteside Chester
 J. P. Wingo Spartanburg

Summaries

By Classes

Senior	42
Juniors	82
Sophomores	131
Freshmen	252
Preparatory	145
Special	2
Short Course Textile	8
Irregular	11
Total	673

By States

South Carolina	664
Georgia.. ..	6
North Carolina	3
Virginia	1

By Counties in South Carolina

Abbeville	29
Aiken	12
Anderson	55
Bamberg.. ..	5
Barnwell.. ..	15
Beaufort	7
Berkeley.. ..	5
Charleston	59
Cherokee.. ..	11
Chester	19
Chesterfield	3
Clarendon	13

Colleton	14
Darlington	19
Dorchester	5
Edgefield	9
Fairfield	16
Florence	16
Georgetown	10
Greenville	20
Greenwood	23
Hampton	7
Horry	10
Kershaw	8
Lancaster	5
Laurens	27
Lee	9
Lexington	15
Marion	14
Marlboro	13
Newberry	19
Oconee	16
Orangeburg	30
Pickens	19
Richland	21
Saluda	6
Spartanburg	29
Sumter	14
Union	13
Williamsburg	6
York	17
Total, South Carolina	664

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CATALOGUE
OF THE
CLEMSON
AGRICULTURAL COLLEGE
OF SOUTH CAROLINA

STATE AGRICULTURAL AND MECHANICAL COLLEGE

POSTOFFICE: CLEMSON COLLEGE
TELEGRAPH, EXPRESS AND FREIGHT OFFICES: CALHOUN

1905-1906
THIRTEENTH YEAR

ANNOUNCEMENTS 1906-1907

Columbia, S. C.
THE R. L. BRYAN COMPANY
1906

1906

JULY							SEPTEMBER							NOVEMBER						
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1907

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College Calendar

Session 1906—1907

1906

Aug. 13-17. State Farmers' Institute, at the College.

Sept. 12-17. Examinations for admission and for removal of conditions.

Sept. 12. Opening of the 14th session; exercises begin at 8.40 A. M.

Nov. 29. Thanksgiving Day: a holiday.

Dec. 23. First day of Christmas recess.

1907

Jan. 3. Beginning of the second term, 8.40 A. M.

Jan. 19. Lee's birthday; annual public exercises of the Columbian literary society in the evening.

Feb. 22. Washington's birthday: a holiday.
Annual public exercises of the Palmetto literary society in the evening.

Feb. 26. Stated meeting of the Board of Trustees.

Mar. 18. Calhoun's birthday: a holiday.
Annual public exercises of the Calhoun literary society in the evening.

1907

Mar. 18. Beginning of the third term, 8.40 A. M.

May 1. A holiday.
Annual track and field athletic contests.

June 9. Beginning of commencement exercises; baccalaureate sermon.

June 10. Address of alumni orator.
Contest of literary society representatives.
Military exercises and graduation parade.
Stated meeting of the Board of Trustees.

June 11. Commencement day; address to the graduating class.
Graduating exercises; delivery of diplomas.

Reports to Parents

Reports of class standing and discipline will be sent to parents for periods ending on the following dates:

Oct. 26, and Dec. 14,* 1906; Feb. 2, Mar. 8,* April 19, and May 31,* 1907. Dates marked with an asterisk (*) are approximate, depending upon the beginning of the respective term examinations.

Quarterly Dues

Payable Sept. 12, Nov. 14, 1906; Jan. 28, April 2, 1907.

Board of Trustees

Life Members

HON. R. W. SIMPSON, President.....Pendleton, Anderson Co.
 SENATOR B. R. TILLMAN.....Trenton, Edgefield Co.
 HON. R. E. BOWEN.....Briggs, Pickens Co.
 HON. J. E. BRADLEY.....Troy, Abbeville Co.
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 HON. J. E. WANNAMAKER.....St. Matthews, Orangeburg Co.
 HON. ALAN JOHNSTONE.....Newberry, Newberry Co.

Term Expires 1908

HON. J. E. TINDAL.....Felder, Clarendon Co.
 HON. JESSE H. HARDIN.....Chester, Chester Co.
 HON. G. DUNCAN BELLINGER.....Columbia, Richland Co.

Term Expires 1910

HON. W. D. EVANS.....Cheraw, Marlboro Co.
 HON. L. A. SEASE.....Prosperity, Newberry Co.
 HON. IVY M. MAULDIN.....Pickens, Pickens Co.

Standing Committees of the Board

Executive Committee

Messrs. Donaldson, Tindal, Bowen, Bradley, Johnstone.

Finance Committee

Messrs. Simpson, Donaldson, Johnstone, Mauldin.

Committee on Fertilizer Control

Messrs. Tindal, Wannamaker, Evans, Bellinger, Tillman.

Experiment Station Committee

Messrs. Tillman, Tindal, Wannamaker, Donaldson, Evans.

Farmers' Institute Committee

Messrs. Johnstone, Sease, Donaldson, Evans, Tillman, Simpson.

Entomological Inspection Committee

Messrs. Sease, Donaldson, Wannamaker, Mauldin.

Veterinary Inspection Committee

Messrs. Evans, Bowen, Johnstone, Bellinger, Mauldin.

Committee on Coast Experiments

Messrs. Wannamaker, Evans, Tindal, Tillman, Donaldson.

Board of Visitors for the Session 1906—1907

Meeting first Wednesday in May.

FIRST DISTRICT—Hon. Huger Sinkler, Charleston.

SECOND DISTRICT—Hon. G. L. Toole, Aiken.

THIRD DISTRICT—Hon. Chas. H. Carpenter, Pickens.

FOURTH DISTRICT—Hon. Thos. P. Cothran, Greenville.

FIFTH DISTRICT—Hon. J. G. Richards, Jr., Liberty Hill.

SIXTH DISTRICT—Hon. R. P. Hamer, Jr., Hamer.

SEVENTH DISTRICT—Hon. Altamont Moses,* Sumter.

*Deceased.

Faculty*

PATRICK HUES MELL, Ph. D., LL. D.
President.

Agricultural Department

JOSEPH NELSON HARPER, B. S., M. Agr.
Director of Department.
Professor of Agriculture

FRED HARVEY HALL CALHOUN, Ph. D.
Professor of Geology and Mineralogy.

CHARLES CARTER NEWMAN,
Associate Professor of Horticulture.

CHARLES EDWARD CHAMBLISS, B. S., M. S.,
Associate Professor of Zoology and Entomology.

HAVEN METCALF, A. M., Ph. D.**
Associate Professor of Botany and Bacteriology.

LOUIS AMOS KLEIN, V. M. D.,
Associate Professor of Veterinary Science.

JOHN MICHELS, M. S.,
Associate Professor of Animal Husbandry and Dairying.

CLIFFORD LEWIS NEWMAN, M. S.,
Associate Professor of Agriculture.

HOMER DOLIVER HOUSE, B. S., M. A.†
Associate Professor of Botany and Bacteriology.

JUNIUS MILTON BURGESS, B. S.,
Herdsman.

OSCAR NELSON, V. M. D.,
Assistant in Veterinary Science.

*The names of the Faculty, after that of the President, are arranged in groups in each department: Professors. Associate Professors, Assistant Professors, and Instructors, in the order of their respective appointments.

**Resigned, to take effect January 1st, 1906.

†In place of Prof. Metcalf.

Mechanical and Electrical Department

WALTER MERRITT RIGGS, E. M. E.,
Director of Department,
Professor of Mechanical and Electrical Engineering.

SAMUEL BROADUS EARLE, A. M., M. E.,
Associate Professor of Mechanical Engineering.

THOMAS GRAYSON POATS,*
Associate Professor of Physics.

RUDOLPH EDWARD LEE, B. S.,
Associate Professor of Drawing.

JAMES McCLURE, M. A.,**
Associate Professor of Physics.

JOHN HILLIARD HOOK, B. S.,
Assistant Professor of Wood-work.

WILLISTON WIGHTMAN KLUGH, B. S.,
Assistant Professor of Drawing.

FRANK TOWNES DARGAN, M. S.,
Assistant Professor of Electricity.

JOHN WEEMS GANTT,
Assistant Professor of Forge and Foundry.

STYLES TRENTON HOWARD, B. M. E.,
Assistant Professor of Machine-work.

CRAWFORD GOODMAN TIMBERLAKE,
Instructor in Drawing.

ANDREW BURCHELL GARDNER,
Assistant in Wood-work.

*Absent on leave during the session of 1905-1906.

**In the place of Professor Poats for the session of 1905-1906.

Department of Chemistry

MARK BERNARD HARDIN,
Director of Department,
Professor of Chemistry.

RICHARD NEWMAN BRACKETT, A. B., Ph. D.,
Associate Professor of Chemistry.

FRANK SCOTT SHIVER, Ph. G.,
Assistant Professor of Agricultural Analysis.

DAVID HILL HENRY, B. S.,
Assistant Professor of Chemistry.

Department of Textile Industry

CHARLES STEBBINS DOGGETT,
Director of Department,
Professor of Textile Chemistry and Dyeing.

BARTHOLOMEW MOORE PARKER, B. S.,
Assistant Professor of Carding and Spinning.

CLAUDE WIGHTMAN McSWAIN, B. S.,
Assistant Professor of Weaving and Designing.

Academic Department

CHARLES MANNING FURMAN, A. B.,
Professor of English.

WILLIAM SHANNON MORRISON, A. B.,
Professor of History and Political Economy.

PAUL THOMAS BRODIE, B. S., A. B.,
Professor of Mathematics and Civil Engineering.

JOHN SHERWOOD McLUCAS, A. M.,
Assistant Professor of English.

DAVID WISTAR DANIEL, M. A.,
Assistant Professor of English.

SAMUEL MANER MARTIN, B. S.,
Assistant Professor of Mathematics.

AUGUSTUS SHANKLIN, B. S.,
Registrar and Secretary of the Faculty,
Assistant Professor of Mathematics.

THOMAS WADLINGTON KEITT,
Assistant Professor of English.

ARTHUR BUIST BRYAN, B. S., B. Litt.,
Assistant Professor of English.

HALE HOUSTON, C. E.,
Assistant Professor of Applied Mathematics in Civil Engineering.

JOSEPH EVERETT HUNTER, B. S.,
Assistant Professor of Mathematics.

Military Department

CHARLES DONALD CLAY,
Captain U. S. Army, Retired, Commandant of Cadets,
Professor of Military Science and Tactics.

Preparatory Department

MARK EDWARD BRADLEY, A. B.,
Instructor in English, History, and Geography.

BURR HARRISON JOHNSTONE, A. B.,
Instructor in Mathematics.

The following members of the Collegiate Faculty also instruct the Preparatory Class in the subjects indicated:

PROFESSOR MORRISON, History.

PROFESSOR CALHOUN, Geography.

ASSISTANT PROFESSOR KEITT, English.

ASSISTANT PROFESSOR BRYAN, English.

Standing Committees of the Faculty

The President is *ex officio* a member of each committee.
The first named in each instance is chairman.

Discipline Committee

President Mell, Professors Hardin, Furman, Morrison, Brodie, Riggs,
Calhoun, Clay, Harper, Doggett.

Committee on Examinations

Professors Brodie, Furman, Morrison, Riggs, Calhoun.

Schedule Committee

Professors Morrison, Brackett, Furman, Riggs, Lee, Brodie, Clay,
Doggett, Harper.

Library Committee

Professors McLucas, Chambliss, Bryan, Calhoun, Doggett, Earle.

Committee on Preparatory Department

Professors Furman, Morrison, Brodie, Calhoun.

Committee on Irregular Students

Professors Chambliss, Lee, Houston, Klugh, Newman, C. L.

Committee on Chapel Services

Professors Earle, Shiver, Lee, Keitt, Bradley.

Committee on Chapel Music

Professors Riggs, Hook, Bryan.

Committee on Lectures and Entertainments

Professors Daniel, Martin, Klugh, Houston, Dargan.

Committee on Extension Work

Professors Chambliss, Daniel, Calhoun, Klein, Earle.

Committee on Alumni

Professors Shanklin, Lee, Henry.

Committee on Athletics

Professors Riggs, McLucas, Daniel, Shanklin, Calhoun, Gantt.

Catalogue Committee

Professors Earle, Brackett, Houston, Clay, Klein, Parker.

Museum Committee

Professors Calhoun, Metcalf, Chambliss.

Officers of the College

PATRICK HUES MELL, Ph. D., LL. D.,
President.

CHARLES DONALD CLAY,
Captain U. S. Army, Retired,
Commandant.

ALEXANDER MAY REDFERN, B. S., M. D.,
Surgeon.

AUGUSTUS SHANKLIN,
Registrar and Secretary of Faculty.

PAUL HAMILTON EARLE SLOAN, M. D.,
Treasurer and Secretary Board of Trustees.

HUGH MILTON STACKHOUSE,
Secretary Board of Fertilizer Control

GEORGE EDWIN TAYLOR,
Bookkeeper.

MISS SUE HALL SLOAN,*
Librarian.

MISS KATHARINE BOCQUET TRESBOT,**
Librarian.

MISS MINNIE BATES WANNAMAKER,
Secretary to the President.

MISS HELEN BRADFORD,
Stenographer to Agricultural Department.

JOHN NATHAN HOOK,
Justice Clemson College Corporation.

JAMES PERCIVAL LEWIS,
Superintendent of College Farm.

AUGUST SCHILLETTER,
Steward.

WILLIAM CALVIN TUCKER,
Assistant to Commandant.

BEN CURTIS HARD,
Assistant Bookkeeper.

J. S. GOODMAN,
In Charge of Construction and Repairs.

Board of Health

President MELL, Doctors REDFERN and SLOAN, Professor
HARDIN.

*Resigned, to take effect January 1st, 1906.

**In place of Miss Sue Sloan.

Regimental Organization

JANUARY 16TH, 1906.

Commandant Cadets

CAPT. CHARLES DONALD CLAY,
U. S. ARMY, RETIRED.

Regimental Staff

T. F. Barton, Jr.....*Captain and Adjutant*
O. L. Derrick.....*Captain and Quartermaster*

Non-Commissioned Staff

F. M. Stephenson.....*Sergeant Major*
F. M. Furtick.....*Quartermaster Sergeant*
J. W. McLendon.....*Color Sergeant*
E. B. Plenge.....*Color Sergeant*

Hospital Corps

A. G. Ellison.....*Captain*
W. A. Keenan.....*First Sergeant*

Signal Corps

S. H. Sherard.....*Sergeant*

First Battalion

MAJOR T. E. STOKES,

Adjutant.

D. H. HILL.

Sergeant Major.

S. R. PERRIN.

COMPANY "A" COMPANY "B" COMPANY "C"

COMPANY "D"

Captains

J. E. Johnson M. A. Savage J. M. Moss L. R. Hoyt

Lieutenants

C. A. Grainger S. P. Harper P. H. Adams H. W. Schumpert
J. H. McLain F. R. Sweeney D. F. Cherry D. G. Adams

First Sergeants

W. P. Sloan R. R. Tolbert E. A. Crawford E. D. McCutcheon

Sergeants

H. P. Lykes B. D. Carter A. M. Klugh H. C. Crum
H. W. Moore M. M. Platt P. L. Howle G. R. Jones
E. B. Plenge P. Quattlebaum M. H. Banks J. J. Brown
D. L. Tindal G. H. Folk W. W. Wannamaker C. W. Wannamaker

Corporals

D. N. Harris	J. C. Littlejohn	C. A. McLendon	W. L. Easterlin
F. J. Crider	C. L. Cannon	F. P. Caughman	E. M. Jones
H. C. Wilburn	J. L. Boyd	W. M. Lunn	C. W. Rice
J. W. Lewis	L. C. Boone	W. H. Rumff	W. O. Pratt
F. L. Martin	C. L. Stevens	J. E. Lunn	L. O. Watson
G. M. Truluck	F. M. Garrison	J. M. Napier	W. J. Roach
B. H. Covington	M. G. Williams		

Second Battalion.

MAJOR W. P. WHITE

Adjutant

W. J. Latimer

Sergeant Major

J. B. Bailey

COMPANY "E"

COMPANY "F"

COMPANY "G"

COMPANY "H"

Captains

I. W. Bull

T. B. Jacobs

E. H. Jones

W. A. Sanders

Lieutenants

J. A. Gelzer

L. G. Southard

A. R. McAliley

S. L. Johnson

J. C. Summers

J. C. Boesch

T. R. Ellison

J. V. Phillips

J. N. Wright

First Sergeants

J. W. Hicklin

J. W. Keel

W. H. Stevens

A. V. Hooks

Sergeants

J. M. Bryan

R. A. Easterlin

C. W. Busch

A. B. Taylor

E. M. Kaminer

D. M. Fraser

P. W. Spencer

C. T. Pottinger

F. A. Connor

W. L. Stone

A. V. Bethea

O. M. Reid

R. A. Reid

A. L. Campbell

T. D. Eason

R. E. Dalton

Corporals

T. S. Allen

E. H. Wyman

T. P. Kennedy

B. B. Ezell

S. C. Blease

E. H. Shuler

A. G. Kennedy

J. S. Wessinger

R. E. Blake

G. W. Speer

R. B. DuPree

J. Spratt

J. J. LaRoche

C. C. Johnson

W. P. Gee

J. L. Farmer

A. C. Summers

T. C. Heyward

J. B. Simpson

J. E. Alverson

J. A. Phillips

T. L. Ogier

W. D. Simpson

W. A. Thomas

R. O. Poag

A. W. Cherry

Cadet Band

W. R. Smith, *Chief Musician and Lieutenant.*

A. S. Heyward, *Drum Major.*

W. L. Schachte, *Sergeant.*

W. K. Tavel, *Solo B b Cornet.*

C. A. Sanders, *Solo B b Cornet.*

J. P. Lewis, *1st B b Cornet.*

H. E. Sturdyvin, *2d B. b Cornet.*

H. E. Vincent, *2d B b Cornet.*

P. G. Mims, *1st B b Clarinet*

T. L. Bissell, *1st E b Clarinet.*

W. R. Smith, *Piccolo.*

L. Boggs, *Baritone.*

W. L. Schachte, *1st Trombone.*

G. D. Curtis, *2d Trombone.*

E. P. Crouch, *Bass.*

T. N. Bristow, *Bass.*

C. W. Mack, *1st Tenor.*

G. S. Ward, *2d Tenor.*

C. M. Trott, *1st Alto.*

J. Smeltzer, *2d Alto.*

J. M. Wylie, *3d Alto.*

H. P. Sitton, *Bass Drum.*

W. H. Wylie, *Snare Drum.*

C. W. Marston, *Cymbals.*

Experiment Station Staff

- P. H. MELL, Ph. D., LL. D., *President of College.*
J. N. HARPER, B. S., M. Agr., *Director Agriculture.*
M. B. HARDIN, *Chief Chemist.*
C. C. NEWMAN, *Horticulture.*
C. E. CHAMBLISS, M. S., *Entomology and Zoology.*
L. A. KLEIN, V. M. D., *Veterinary Science.*
JOHN MICHELS, M. S., *Animal Husbandry and Dairying.*
C. L. NEWMAN, M. S., *Agriculture.*
F. H. H. CALHOUN, Ph. D., *Geology.*
H. D. HOUSE, A. M., *Botany and Bacteriology.*
F. S. SHIVER, Ph. G., *Chemistry.*
R. N. BRACKETT, Ph. D., *Chemistry.*
J. N. HOOK, *Secretary and Librarian.*
C. C. McDONNELL, B. S., *Chemistry and Fertilizer Control.*
B. F. ROBERTSON, B. S., *Chemistry and Fertilizer Control.*
D. H. HENRY, B. S., *Chemistry.*
W. E. DICKINSON, B. S., *Chemistry Assistant (Fertilizer Control).*
J. H. MITCHELL, M. S., *Chemistry Assistant (Fertilizer Control).*
J. M. BURGESS, B. S., *Herdsman.*
J. M. JENKINS, B. S., *Foreman of Station Farm.*
MISS HELEN C. BRADFORD, *Stenographer.*
W. D. GARRISON, B. S., *in charge of Coast Branch Experiment Station.*

State Chemist and Inspection Officers*

- PROFESSOR M. B. HARDIN, *State Chemist.*
PROFESSOR C. E. CHAMBLISS, *State Entomologist.*
DR. L. A. KLEIN, *State Veterinarian.*

*Appointed by the Board of Trustees under the State laws requiring them to carry on the work indicated.

Ministers for Session 1905—1906

- Sept. 10. Rev. J. M. Magruder, Spartanburg, S. C.
Sept. 17. Rev. W. T. Hall, D. D., Columbia, S. C.
Sept. 24. Rev. J. G. Beckwith, Florence, S. C.
Oct. 1. Rev. L. M. Roper, D. D., Spartanburg, S. C.
Oct. 8. Rev. K. G. Finlay, Clemson College, S. C.
Oct. 15. Rev. W. G. Neville, D. D., Clinton, S. C.
Oct. 29. Rev. A. J. Ranson, Spartanburg, S. C.
Nov. 5. Rev. J. D. Chapman, D. D., Anderson, S. C.
Nov. 12. Rev. W. B. Sams, Greenville, S. C.
Nov. 19. Rev. A. J. Wardlaw, D. D., Union S. C.
Nov. 26. Rev. Geo. T. Harmon, Greers, S. C.
Dec. 3. Rev. Geo. A. Wright, Newberry, S. C.
Dec. 10. Rt. Rev. Ellison Capers, Columbia, S. C.
Dec. 17. Rev. J. E. James, Anderson, S. C.
Jan. 7. Rev. E. M. Poteat, D. D., LL. D., Greenville, S. C.
Jan. 14. Rev. R. R. Swope, D. D., Biltmore, N. C.
Jan. 21. Rev. T. W. Sloan, Greenville, S. C.
Jan. 28. Rev. D. M. McLeod, Union, S. C.
Feb. 4. Prof. W. M. Steele, Greenville, S. C.
Feb. 11. Rev. S. Cary Beckwith, Aiken, S. C.
Feb. 18. Rev. D. M. Fulton, Darlington, S. C.
Feb. 25. Rev. G. P. Watson, Beaufort, S. C.
Mar. 4. Rev. D. M. Ramsey, D. D., Charleston, S. C.
Mar. 11. Rev. Wm. Way, Charleston, S. C.
Mar. 18. Rev. J. W. Holladay, Manning, S. C.
Mar. 25. Rev. W. A. Massebeau, Spartanburg, S. C.
April 1. Rev. A. J. S. Thomas, D. D., Greenville, S. C.
April 8. Rev. A. H. McArn, Cheraw, S. C.
April 15. Rev. K. G. Finlay, Clemson College, S. C.
April 22. R. S. Truesdale, Anderson, S. C.
April 29. Rev. J. H. Pressley, Statesville, N. C.
May 6. Rev. W. C. Lindsay, D. D., Columbia, S. C.
May 13. Rev. H. H. Covington, Sumter, S. C.
May 20. Rev. H. W. Pratt, Washington, D. C.
May 28. Rev. B. R. Turnipseed, Columbia, S. C.
June 3. Rev. C. S. Gardner, D. D., Richmond, Va.
June 10. Baccalaureate Sermon, Rev. J. Y. Fair, Savannah, Ga.

Alumni Organizations

Clemson College Alumni Association

- D. H. HENRY, '98, President, Clemson College, S. C.
 E. T. HUGHES, '01, First Vice-President, Marion, S. C.
 B. R. TILLMAN, Jr., '96, Second Vice-President, Trenton, S. C.
 W. E. G. BLACK, '03, Third Vice-President, Spartanburg, S. C.
 A. B. BRYAN, '98, Secretary, Clemson College, S. C.
 W. W. KLUGH, '96, Treasurer, Clemson College, S. C.
 E. T. HUGHES, '01, Orator for 1906; E. B. BOYKIN, '02, Alternate.

The New York Clemson Club, New York City

- J. T. BOWEN, '96, President.
 W. J. SARRATT, '98, Vice-President.
 EDGAR M. MATTHEWS, '01, Secretary.

The Washington Chapter of the Clemson College Alumni Association, Washington, D. C.

- E. T. HUGHES, '01, President.
 M. E. ZEIGLER, '02, Vice-President.
 T. B. YOUNG, '03, Secretary.
 G. H. SWYGERT, '98, Treasurer.

The Clemson Club of Charleston, S. C.

- C. M. FURMAN, Jr., '96, President.
 W. E. GREGG BLACK, '03, Vice-President.
 W. D. GARRISON, '03, Secretary.
 E. BROCKMANN, '02, Treasurer.

The New England Clemson Club

- H. B. JENNINGS, '02, President, Middletown, Conn.
 F. H. CUNNINGHAM, '03, Vice-President, Whitensville, Conn.
 DAVID JENNINGS, '02, Secretary, Middletown, Conn.
 J. C. CULLUM, '03, Treasurer, Norwich, Conn.

LOCATION AND HISTORICAL SKETCH
ADMISSION AND COURSES OF STUDY

Location

The College is located on the old Fort Hill homestead of John C. Calhoun, on the dividing line between Oconee and Pickens Counties, in the picturesque foot-hills of the Blue Ridge. It has an elevation of 900 feet above sea level, and commands an excellent view of the mountains to the north and west, some of which attain an altitude of nearly 5,000 feet. The climate is invigorating and healthful, and the surroundings are in every way favorable to the highest physical and mental development.

The College is one mile from Calhoun, a station on the main line of the Southern Railway, and two miles from Cherrys, on the Blue Ridge Railroad. By means of these roads and their connections, the College is easily accessible from all parts of the State. It is also connected by local telephone with neighboring towns in adjoining counties, and by telegraph and long distance telephone with all parts of the country. The post office is conveniently situated on the campus, and receives five daily mails.

Historical Sketch

The College is the outcome of a movement for the establishment of an Agricultural College by a convention of farmers of the State in 1886. The first step toward the realization of this project was taken by the Hon. Thomas G. Clemson, who, upon his death in 1888, bequeathed to the State the old Fort Hill homestead, the former home of John C. Calhoun, and other securities to the value of \$58,539, "for the establishment of an Agricultural College." The estate included about 800 acres of land and the historic old Calhoun residence, which is now carefully preserved on the College campus. This bequest was accepted by the State Legislature in an Act which became a law in November, 1889.

The College was opened on the 6th day of July, 1893, and 446 students were enrolled during the first session. These were classified as sophomores, freshmen, and higher and lower preparatory. The Trustees having decided that sessions should begin on the third Thursday in February and end on the third Thursday in December, the first session was

only about five and a half months long. On this account the students were continued in the same classes throughout the second session, February to December, 1894, and the enrollment increased to 635. On the night of May 22d, 1894, the Main building was burned, but the regular exercises were not interrupted, and the only summer vacation consisted of a week's encampment at Spartanburg in July.

During the third session, February to December, 1895, there were 370 students in attendance, with the former sophomores advanced to the junior class. There was a recess of two weeks in the latter part of July, and the session was closed on December 7th. The enrollment during the fourth session, February to December, 1896, was 350, and the first commencement exercises were held on December 13th to 16th, 1896, with a graduating class of 37, 15 in the agricultural course and 22 in the mechanical-electrical. The fifth session opened in the regular way, on the third Thursday in February, 1897. At a meeting of the Trustees in July, it was decided to open the College on the 14th of September, and that henceforth the sessions should begin regularly on the second Wednesday in September and close on the second Wednesday in June. The exercises of the second commencement, which would normally have occurred in December, 1897, were held on February 6th to 9th, 1898. The graduating class numbered 25, 13 in the agricultural course and 12 in the mechanical-electrical. The undergraduate classes were continued until June, and the total enrollment for this long session (February, 1897, to June, 1898), was 449. It will be observed that, owing to the change from winter to summer vacation, there was no class graduated in 1897.

Since 1898 the annual commencement exercises have been held regularly in June, although the closing day was afterward changed to first Tuesday, instead of second Wednesday. During the sixth session, 1898-1899, the enrollment was 446, and the graduating class numbered 16, 6 in the agricultural course, 6 in the mechanical-electrical, and 4 in the civil engineering. The textile department was first opened for students at the beginning of this session, in September, 1898. During the seventh session, 1899-1900, 461 students matriculated, and the class of 1900 numbered 28.

including 12 in the agricultural course, 6 in the mechanical-electrical, 6 in the civil engineering, and 4 in the textile.

Beginning with the eighth session, 1900-1901, preparatory instruction was restricted to a one-year course, thus abolishing the lower preparatory class. During the session 483 students were enrolled, and the graduating class numbered 31, including 9 in the agricultural course, 11 in the mechanical-electrical, 2 in the civil engineering, and 9 in the textile. In the ninth session, 1901-1902, 500 students matriculated and 59 were graduated, including 12 in the agricultural course, 28 in the mechanical-electrical, 2 in the civil engineering, and 17 in the textile. The enrollment during the tenth session, 1902-1903, was 539, and the graduating class numbered 60, including 6 in the agricultural course, 28 in the mechanical-electrical, 5 in the civil engineering, and 21 in the textile.

In the eleventh session, 1903-1904, 605 students were enrolled, and the graduating class numbered 39, including 4 in the agricultural course, 28 in the mechanical-electrical, 2 in the civil engineering, and 5 in the textile.

A gold medal was awarded to the mechanical, electrical, civil and textile exhibit at the St. Louis Exposition.

A bronze medal was awarded to the agricultural department for the preservation of the sweet potato.

In the twelfth session, 1904-1905, 673 students were enrolled, and the graduating class numbered 39, including 5 in the agricultural course, 20 in the mechanical-electrical, 8 in the civil, 5 in the textile, and 1 in the metallurgical course. The total number of graduates to June, 1905, was 334.

Admission of Students

Every candidate for admission must be at least sixteen years of age.

Students desiring to enter the College should apply to the President for application blanks, and these, properly filled out, should be returned to the President as early in the summer as possible, and in no case later than August 15th.

Certificates of good moral character are required of all candidates not known to members of the Faculty; and if the

candidates come from another college, this certificate must show that he was honorably discharged.

In selecting students who shall be admitted to the College, subject to their passing the required examinations, the following rules, prescribed by the Board of Trustees, will govern:

1. Students must undergo a medical examination, and no student will be admitted who is not healthy and free from contagious diseases, including consumption.

2. Students will be apportioned among counties in proportion to representation in the House of Representatives, under the following rules and regulations:

(a). Applicants prepared to enter College classes will have preference over those who enter only the preparatory class.

(b). As between applicants of equal preparation, the oldest will have the preference.

(c). Other things being equal, the first applicants will receive permission to enter.

(d): When a county has not sent its quota, the places thus left shall be apportioned among the other applicants.

(e). Provided a sufficient number of applicants from the State to fill the barracks do not apply, then students from other States may be admitted, and when so admitted, may continue in College until they complete their course.

(f). Applicants not entering within ten days after the opening of the session will have their rights in the place given to applicants next on the roll.

Students upon arrival at the College at the opening of the session must report at once to the President's office and matriculate before they will be assigned to quarters in the barracks. No student will be admitted to any of the classes or examinations of the College before matriculation and payment of the fees. (See pages 47-48).

Matriculation is equivalent to a pledge to conform to the rules and regulations of the College.

Entrance Requirements

For admission into the freshman class a thorough knowledge is required of arithmetic, elementary algebra, English grammar, geography, and history of the United States.

Arithmetic.—The applicant is expected to have a thorough practical acquaintance with the ordinary principles and operations of arithmetic. Wentworth's Practical Arithmetic is recommended as a suitable text-book.

Algebra.—The detailed requirements are as follows: Definitions and notation, fundamental operations, including laws of signs, and the interpretation of negative results; use of parentheses; factoring; highest common factor; lowest common multiple; simple and complex fractions; simple integral and fractional equations with one unknown number, and problems leading to such equations; simultaneous equations of the first degree, with applications to solution of problems; involution of monomials and polynomials; evolution of monomials and polynomials; theory of exponents with applications; radicals, including solution of equations involving rationalization; simple operations with imaginary expressions; pure and affected quadratic equations containing one unknown number, with application to problems.

The student should cover carefully the whole ground here specified, and should acquire a clear understanding not only of algebraic processes, but of the principles and reasons involved in every operation. Students fail on entrance examinations more frequently because of imperfect knowledge of the subject matter passed over, than because they have not gone far enough in the text-book.

A satisfactory treatment of the topics in Algebra may be found in Wentworth's New School Algebra (used in the public schools).

English.—Applicants are examined in spelling, sentence analysis, and oral reading; and are required to write short essays on an assigned subject.

Geography.—Applicants must possess a fair knowledge of general geography, such as may be obtained from a proper study of Frye's Advanced, Maury's Manual, Tarr and McMurry's Complete Geography, or other standard text-book of equal grade. The following topics will be especially emphasized in the entrance examinations: Outlines and positions of the continents, and locations of the principal mountains, plateaus, river basins, and coastal lowlands; influences of land forms and climate upon the life and industries of the inhabitants; locations and outlines of important countries.

particularly those of America and Europe, and of the States in the United States; locations of great cities in all countries, and conditions favorable to the growth of cities.

History.—A School History of the United States, by White, is the text-book recommended. Any other school history may be used in place of the one named.

Entrance Examinations

Entrance examinations are held during the first week of the opening of the session, September 12th to 17th, 1906. and all applicants for admission are expected to report promptly at the beginning of this period. Former students, also, who have conditions to remove or work to make up, are required to report at the same time.

Examinations on the subjects required for entrance will be held on the dates shown in the following schedules, beginning at 9 A. M.:

For Admission to the Freshman Class.

Arithmetic, Wednesday, September 12th, 1906.

Algebra, Thursday, September 13th, 1906.

English, Friday, September 14th, 1906.

Geography, Saturday, September 15th, 1906.

History, Monday, September 17th, 1906.

For Admission to the Preparatory Class.

Arithmetic, Wednesday, September 12th, 1906.

English, Thursday, September 13th, 1906.

Geography, Friday, September 14th, 1906.

Upon passing satisfactorily the required examinations, the Committee on Examinations furnishes the applicant with a certificate to that effect, and upon presentation of this certificate at the President's office he is assigned to the class recommended by the Committee.

For admission to advanced standing, applicants must be prepared to stand examinations on the subjects passed over by the lower classes, as indicated in the courses of study scheduled on the following pages. Such applicants should report with other new students during the regular examination period, and arrange with their instructors for the

necessary examinations before the opening of the session. Student admitted to advanced standing are allowed a reasonable length of time in which to make up shop work of the lower classes, in case they have not done equivalent work elsewhere.

Examinations for admission to the beneficiary scholarships established at the recent session of the Legislature are held by the various county boards of education, and cannot be given at the College. For further particulars in regard to these scholarships, see page 52.

Prescribed Courses of Study

As briefly described and tabulated on the following pages, six regular four-year courses are offered, each leading to graduation with the degree of Bachelor of Science (B. S.), the course pursued being designated on the diploma.

The two agricultural courses are alike in the freshman year, and agricultural students are, therefore, required to choose between these at the beginning of the sophomore year. The other four courses are alike during the first two years, and choice between them is made at the beginning of the junior year. The descriptions accompanying the detailed schedules of studies in the various courses are intended to aid the student in arriving at an adequate estimate of the scope and purposes of each course, in order that he may the more intelligently choose between them.

In all the courses, two hours of practical work in shop, laboratory, or field, are regarded as equivalent to one hour of "theoretical" work, or recitations, as no outside preparation is required for practical work, and the exercises are completed in the periods assigned in the curriculum.

Change from one course to another is not permitted except upon approval of the Faculty. Any student desiring to change his course of study must submit a written application to the President for such change within thirty days from the date of his matriculation for the current session.

When change is made at beginning of sophomore year, from one of the engineering courses to the agricultural course or from the agricultural to one of the engineering courses, the student is required to make up the equivalent of

three practical hours per week for a year in whatever subject the director of the department shall specify.

COURSE I.—AGRICULTURE

This is a broad educational course, covering the whole field of natural sciences that are tributary to the agricultural industry, together with a liberal amount of mathematics, English, physics, history and political economy, and a maximum amount of chemistry.

The division of the original course into (1) Agriculture and Horticulture, and (2) Agriculture and Animal Industry, described on the following page, has been made in order to afford opportunity for election in these lines. In this course the student is given more special training in agriculture, horticulture, chemistry, botany, bacteriology, and entomology; and thus is laid a foundation upon which he may readily specialize in any of these branches after graduation. The student is well equipped to take up farming, gardening, or fruit growing as an occupation, or for the pursuit of investigational work in the United States Department of Agriculture or the various state experiment stations.

Either of the agricultural courses forms an excellent foundation for the study of other professions, particularly that of medicine.

COURSE I.—AGRICULTURE

(Numbers in parentheses refer to descriptions beginning on page 79.)

Freshman Class

	Hours per week				Hours per week		
	First Term	Second Term	Third Term		First Term	Second Term	Third Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Woodwork (261).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (230).....	3	3	3
History (511, 512).....	3	3	3	Rural Architecture (233).....	3	3	3
Agriculture (100).....	2	2	2	Agriculture (100).....	3	3	3
Live Stock (150).....	1	1	2	Forge work (242).....	1	1	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522).....	5	-	-	Veterinary Science (131).....	-	-	2
English (502).....	3	3	3	Botanical Lab. (171).....	4	2	1
Chemistry (300).....	3	3	3	Chemical Lab. (301).....	3	2	2
Physics (220).....	2	2	2	Surveying Field (530).....	-	2	2
Surveying (530).....	-	2	2	Physiological Lab. (140).....	-	2	2
Physiology (140).....	-	1	1	Agriculture (102).....	3	2	2
Agriculture (102).....	-	2	2	Horticulture (120).....	2	2	2
Horticulture (120).....	2	2	2	Military Drill (602).....	3	3	3

Junior Class

English (503).....	2	2	2	Rural Engineering (534).....	2	-	-
History (513, 514).....	2	2	2	Chemical Laboratory (303).....	4	4	4
Chemistry (302).....	2	2	2	Zoological Lab. (141).....	-	5	-
Rural Engineering (534).....	2	-	-	Botanical Laboratory (171).....	-	-	3
Zoology (141).....	-	2	-	Agriculture (103, 104).....	2	-	2
Botany (171).....	-	-	3	Horticulture (121).....	-	3	3
Agriculture (103, 104).....	2	-	3	Dairying (162).....	4	-	-
Horticulture (121).....	2	2	2	Military Drill (602).....	3	3	3
Dairying (161).....	2	4	-				
Military Science (600).....	1	1	1				

Senior Class

English (504).....	-	2*	3	Chemical Laboratory (305).....	6	6	6
Political Economy (515).....	3	2*	-	Entomological Lab. (142).....	2	2	2
Chemistry (304).....	2	2	2	Forestry (172).....	2	-	-
Geology (112).....	2	4	-	Bacteriological Lab. (173, 174).....	-	2	4
Entomology (142).....	-	2	3	Agriculture (117).....	2	-	-
Forestry (172).....	2	-	-	Horticulture (122).....	-	2	-
Bacteriology (173, 174).....	-	1	4	Military Drill (602).....	3	3	3
Agriculture (105).....	2	3	2				
Stock Feeding (156).....	3	-	-				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE II.—AGRICULTURE AND ANIMAL INDUSTRY

This is a differentiation of the original course in agriculture for the purpose of affording students specially interested in general animal industry, dairying and veterinary medicine an opportunity to receive more instruction in these lines than was formerly practicable. There is a growing interest in animal industry throughout the State, and this course is intended to meet the demand for more specialized training in this phase of agriculture. In order to afford more time for instruction in these branches, some important, but less essential studies, have been omitted; but mathematics is retained through the second year and a special course in rural engineering put in the third year. English, history and civics are retained throughout the course, drawing the first year, physics the second year, geology the last year and chemistry the last three years, but slightly reduced and changed to meet the demands of this new course. Botany, bacteriology, zoology and entomology are so planned as to begin the first year of the course and thereby contribute to clearer knowledge of farm crops, live stock, dairying, sanitation and animal diseases. General agriculture is taught during the first two years, horticulture the third and veterinary medicine the last three years; while live stock and dairying are taught throughout the course. The live stock work embraces the study of the breeds of horses, cattle, sheep, hogs and poultry, and includes judging, breeding, feeding, care and management of flocks and herds. In the dairy course are taken up the production, handling, manufacture and marketing of whole milk, cream, ice-cream, butter and cheese.

COURSE II.—AGRICULTURE AND ANIMAL INDUSTRY

(Numbers in parentheses refer to descriptions beginning on page 79.)

Freshman Class

	Hours per week				Hours per week		
	First Term	Second Term	Third Term		First Term	Second Term	Third Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Woodwork (261).....	3	3	1
English (501).....	5	5	5	Freehand Drawing (230).....	3	3	3
History (511, 512).....	3	3	3	Rural Architecture (233).....	3	3	3
Agriculture (100).....	2	2	1	Agriculture (100).....	3	3	3
Live Stock (150).....	1	1	2	Forge work (242).....	1	1	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522).....	5	1	1	Veterinary Science (130, 131)...	1	2	2
English (502).....	3	3	3	Chemical Laboratory (301) ..	3	2	2
Chemistry (300).....	3	3	3	Botanical Lab. (171).....	4	1	1
Physics (220).....	2	2	2	Surveying Field (530).....	1	2	2
Surveying (530).....	1	2	2	Physiological Lab. (140).....	1	2	2
Physiology (140).....	1	1	1	Agriculture (102)	3	2	2
Agriculture (102).....	1	2	2	Live Stock (154).....	2	2	2
Live Stock (152, 153).....	2	2	2	Military Drill (602).....	3	3	3

Junior Class

English (453).....	2	2	2	Rural Engineering (534)	2	1	1
History (513, 514).....	2	2	2	Chemical Laboratory (303).....	4	4	4
Chemistry (302).....	2	2	2	Zoological Lab. (141).....	1	1	4
Rural Engineering (534).....	2	1	1	Horticulture (120, 121).....	2	2	2
Zoology (141).....	1	1	4	Dairying (163)	4	2	1
Horticulture (120, 121).....	2	2	2	Veterinary Science (134, 135)...	1	2	2
Dairying (161)	2	4	1	Live Stock (155).....	1	2	1
Veterinary Science (132, 133)...	2	2	2	Military Drill (602).....	3	3	3
Military Science (600).....	1	1	1				

Senior Class

English (504).....	1	2*	3	Chemical Laboratory (305).....	3	3	3
Political Economy (515)	3	2*	1	Entomological Lab. (142)	3	3	1
Chemistry (304).....	2	2	2	Bacteriological Lab. (173, 175) ..	1	3	3
Geology (112).....	2	4	1	Live Stock (159)	3	1	3
Bacteriology (173, 175)	1	1	4	Veterinary Science (139)	3	3	3
Stock Feeding (157, 158, 160)...	3	3	3	Military Drill (602).....	3	3	3
Veterinary Science (136-7-8)...	4	3	2				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE III.—METALLURGY AND GEOLOGY

This course is intended to equip the student for engaging in manufacturing operations involving metallurgy or other branches of inorganic chemistry, or for employment as assayer or chemist in connection with mining operations. It also furnishes a basis upon which he may readily specialize in mining or geology, with a view to conducting actual mining enterprises or to employment in responsible positions on state or national surveys.

The student is well grounded in the principles of chemistry, physics, mechanics, geology and mineralogy, but the principal stress is laid on geology and metallurgical chemistry. He also acquires valuable practical knowledge of surveying, mechanical engineering, foundry practice, drawing and designing, in addition to the pursuit of courses in English, history, political economy, and other subjects of general educational value.

The first two years of the course are the same as in the engineering courses. The third and fourth years differ chiefly in the substitution of advanced work in chemistry and metallurgy and in geology and mineralogy for the higher mathematics and technical engineering work.

For further particulars see the detailed descriptions of subjects tabulated on the opposite page.

COURSE III.—METALLURGY AND GEOLOGY

(Numbers in parentheses refer to descriptions beginning on page 79.)

Freshman Class

	Hours per week				Hours per week		
	First Term	Second Term	Third Term		First Term	Second Term	Third Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521)	5	5	5	Woodwork (260)	3	3	3
English (501)	5	5	5	Freehand Drawing (230)	3	3	3
History (511, 512)	3	3	3	Mechanical Drawing (232)	3	3	3
Agriculture (101)	2	2	2	Forge Work (240)	3	3	3
				Military Drill (602)	3	3	3

Sophomore Class

Mathematics (522-4-5)	5	3	3	Foundry (241)	2	3	3
English (502)	3	3	3	Pattern Making (262)	2	3	3
History (513, 514)	2	2	2	Mechanical Drawing (234)	2	2	2
Chemistry (300)	3	3	3	Chemical Lab. (301)	3	2	2
Physics (220)	2	2	2	Descriptive Geom. (523)	3	1	1
Surveying (530)	-	2	2	Surveying Field (530)	-	2	2
				Military Drill (602)	3	3	3

Junior Class

English (503)	2	2	2	Assaying (303)	2	2	2
Chemistry (302)	2	2	2	Chemical Lab. (303)	4	4	4
Mineralogy (111)	3	3	3	Mineralogical Lab. (111)	2	2	2
Geology (113)	3	3	3	Mechanical Drawing (237)	2	2	2
Physics (221)	2	2	2	Physical Lab. (222)	2	2	2
Mechanism (210)	2	-	-	Military Drill (602)	3	3	3
Mechanics (211)	-	2	2				
Military Science (600)	1	1	1				

Senior Class

English (504)	-	2*	3	Chemical and Metallurgical			
Pol. Economy (515)	3	2*	-	Laboratory (311)	6	6	6
Chemistry (306)	2	2	2	Practical Geol. (116)	3	3	3
Metallurgy (310)	2	2	3	Mechanical Lab. (215)	3	3	3
Economic Geology (115)	2	3	4	Military Drill (602)	3	3	3
Petrography (114)	2	2	2				
Mechanical Eng. (213)	3	3	-				
Military Science (601)	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE IV.—MECHANICAL AND ELECTRICAL ENGINEERING

This course is designed to fit young men for responsible positions in the various departments of these professions. It attempts, by practical and theoretical instruction, to lay a solid scientific foundation upon which the student may build rapidly after graduation. The experience necessary to make a successful engineer cannot be acquired in a college course, but the technically educated graduate usually soon distances his uneducated competitors.

While devoting considerable time to purely technical work, it is recognized that to obtain the best ultimate results, the student should be given a thorough training in the English language and as broad and liberal a culture as the time available and his previous preparation will permit. Seeking in some degree to attain this end, such studies as history, English literature, civics, economics, geology, and botany are taught in the course, as well as the partly technical sciences, mathematics, physics, and chemistry.

Within the department are taught physics, mechanics, and mechanical and electrical engineering. Along with the theoretical instruction in these subjects, practice is given in laboratories equipped with the best modern apparatus.

Shop instruction is given in carpentry, turning, and pattern-making; in moulding; chipping and filing, and the use of machine tools. The purpose of this instruction is not to turn out skilled artisans, but rather men capable of directing enterprises into which these trades enter as component parts.

The work in drawing is made one of the features of the course, including instruction in freehand drawing in the first year, mechanical drawing during the first three years and machine design in the fourth year.

Graduates from this course are filling responsible positions in various lines of mechanical and electrical engineering and in drawing.

COURSE IV--MECHANICAL AND ELECTRICAL ENGINEERING

(Numbers in parentheses refer to descriptions beginning on page 79.)

Freshman Class

	Hours per week				Hours per week		
	First Term	Second Term	Third Term		First Term	Second Term	Third Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521)	5	5	5	Woodwork (260)	3	3	3
English (501)	5	5	5	Freehand Drawing (230)	3	3	3
History (511, 512)	3	3	3	Mechanical Drawing (232)	3	3	3
Agriculture (101)	2	2	2	Forge Work (240)	3	3	3
				Military Drill (602)	3	3	3

Sophomore Class

Mathematics (522-4-5)	5	3	3	Foundry (241)	2	3	3
English (502)	3	3	3	Pattern Making (262)	2	3	3
History (513, 514)	2	2	2	Mechanical Drawing (234)	2	2	2
Chemistry (300)	3	3	3	Chemical Lab. (301)	3	2	2
Physics (220)	2	2	2	Descriptive Geom. (523)	3	-	-
Surveying (530)	-	2	2	Surveying Field (530)	-	2	2
				Military Drill (602)	3	3	3

Junior Class

Mathematics (525-527)	5	5	5	Mechanical Drawing (235)	3	3	3
English (503)	2	2	2	Machine Shop (250)	3	3	3
Physics (221)	2	2	2	Physical Lab. (222)	3	3	3
Electrical Eng. (200)	3	3	3	Electrical Lab. (201)	3	3	3
Mechanism (210)	2	-	-	Military Drill (602)	3	3	3
Mechanics (211)	-	2	2				
Military Science (600)	1	1	1				

Senior Class

English (504)	-	2*	3	Machine Shop (251)	3	3	3
Political Econ. (515)	3	2*	-	Machine Design (238)	3	3	3
Electrical Eng. (202)	5	5	5	Electrical Lab. (203)	3	3	3
Mechanical Eng. (213)	3	3	3	Mechanical Lab. (214)	3	3	3
Mechanics (212)	2	2	-	Military Drill (602)	3	3	3
Geology (112)	1	2	1				
Military Science (601)	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE V.—CIVIL ENGINEERING

This course is intended to prepare young men for entrance upon professional practice in some of the many branches of civil engineering, and also to meet the needs of those who, having been engaged in engineering work without a course of instruction, desire to equip themselves for more successful competition with those who have had such instruction.

In connection with the technical studies, liberal training is given in English, history, economics, pure mathematics and the physical sciences. The course will also be found to embrace the same amount of drawing, shop work, mechanical engineering and mechanical laboratory practice as the other engineering course.

The distinctive work pursued by students in this course includes the study of land surveying and plotting, topographic surveying and mapping; location, construction, and maintenance of roads, railroads, streets, and pavements; strength of building materials, masonry construction, foundations on land and in water; analytic and graphic investigations of stresses in girders, roofs, and bridges, and the design of these structures; the principles of hydraulics as applied to dams, reservoirs, canals, municipal water works, and the development of water power.

For fuller details, see descriptions of instruction in these subjects.

COURSE V.—CIVIL ENGINEERING

(Numbers in parentheses refer to descriptions beginning on page 79.)

Freshman Class

	Hours per week				Hours per week		
	First Term	Second Term	Third Term		First Term	Second Term	Third Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521).....	5	5	5	Woodwork (260).....	3	3	3
English (501).....	5	5	5	Freehand Drawing (230).....	3	3	3
History (511, 512).....	3	3	3	Mechanical Drawing (232).....	3	3	3
Agriculture (101).....	2	2	2	Forge Work (240).....	3	3	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522-4-5).....	5	3	3	Foundry (241).....	2	3	3
English (502).....	3	3	3	Pattern Making (262).....	2	3	3
History (513, 514).....	2	2	2	Mechanical Drawing (234a).....	2	2	2
Chemistry (300).....	3	3	3	Chemical Lab. (301).....	3	2	2
Physics (220).....	2	2	2	Descriptive Geom. (523).....	3	-	-
Surveying (530).....	-	2	2	Surveying Field (530).....	-	2	2
				Military Drill (602).....	3	3	3

Junior Class

Mathematics (525, 527).....	5	5	5	Mechanical Drawing (236).....	3	3	3
English (503).....	2	2	2	Machine Shop (250).....	3	3	3
Physics (221).....	2	2	2	Physical Lab. (222).....	2	2	-
Civil Engineering (531-3).....	3	3	3	Civil Eng. Field (531-3).....	4	4	3
Mechanism (210).....	2	-	-	Mineralogical Lab. (110).....	-	-	3
Mechanics (211).....	-	2	2	Military Drill (602).....	3	3	3
Military Science (600).....	1	1	1				

Senior Class

English (504).....	-	2*	3	Mechanical Drawing (239).....	3	3	3
Political Economy (515).....	3	2*	-	Mechanical Lab. (214).....	3	3	3
Civil Engineering (535-7).....	5	5	5	Civil Eng. Field (535-7).....	6	6	6
Mechanical Eng. (213).....	3	3	5	Military Drill (602).....	3	3	3
Mechanics (212).....	2	2	-				
Geology (112).....	1	2	1				
Military Science (601).....	1	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

COURSE VI.—TEXTILE INDUSTRY

This department was established primarily to direct young men in their study of the textile fibers, to teach their manipulation, and the after processes of manufacture required by the trade.

The principles underlying the art of manufacture are taught by lecture, text-book, and experiment; skill is acquired by intimate contact with the machinery equipment, which consists of various types of machines designed by the prominent builders of cotton machinery in this country.

The aim has been to arrange a course in which the student will be allowed the opportunity of acquiring a good general education along with this special training in textiles. For this reason, in order to allow time to be devoted to culture studies, and to instruction in the general principles of the sciences involved in manufacture, the course does not follow special lines closely until the junior year.

During the junior and senior years, in which more time is devoted to textile subjects, the student is brought face to face with facts and conditions, from the proper observation and study of which he may obtain information and experience that would take him years to acquire in the mills.

This course does not presume to fit one for the active management of a mill immediately upon graduation, but is intended to give the student a broad foundation on which to specialize, and the graduate is in possession of such information, and has acquired such experience and knowledge in handling raw materials and manufacturing machinery as, if supplemented by energy, application, and tact, will soon place him among leading cotton manufacturers.

COURSE VI.—TEXTILE INDUSTRY

(Numbers in parentheses refer to descriptions beginning on page 79.)

Freshman Class

	Hours per week				Hours per week		
	First Term	Second Term	Third Term		First Term	Second Term	Third Term
THEORETICAL				PRACTICAL			
Mathematics (520, 521)...	5	5	5	Woodwork (260).....	3	3	3
English (501)	5	5	5	Freehand Drawing (230).....	3	3	3
History (511, 512).....	3	3	3	Mechanical Drawing (232).....	3	3	3
Agriculture (101).....	2	2	2	Forge Work (240).....	3	3	3
				Military Drill (602).....	3	3	3

Sophomore Class

Mathematics (522, 4-5).....	5	3	3	Foundry (241).....	2	3	3
English (502)	3	3	3	Pattern Making (262).....	2	3	3
History (513, 514).....	2	2	2	Mechanical Drawing (234).....	2	2	2
Chemistry (300)	3	3	3	Chemical Laboratory (301).....	3	2	2
Physics (220).....	2	2	2	Descriptive Geom. (523).....	3	—	—
Surveying (530).....	—	2	2	Surveying Field (530).....	—	2	2
				Military Drill (602).....	3	3	3

Junior Class

Mathematics (525-527).....	5	5	5	Machine Shop (250).....	3	3	3
English (503).....	2	2	2	Chemical Lab. (303, 420).....	3	3	3
Textile Chemistry (420).....	2	2	2	Weaving (410, 411).....	3	3	3
Designing (412).....	2	1	1	Carding and Spinning (400, 406).....	3	3	3
Carding and Spinning (407, 409).....	1	2	2	Military Drill (602).....	3	3	3
Mechanism (210)	2	—	—				
Mechanics (211)	—	2	2				
Military Science (600).....	1	1	1				

Senior Class

English (504).....	—	2*	3	Mechanical Lab. (215).....	—	3	3
Political Economy (515).....	3	2*	—	Cam Drawing (239a).....	2	—	—
Mechan. Engineering (213).....	3	3	—	Carding and Spinning (407, 409).....	3	2	3
Carding and Spinning (407, 409).....	2	2	2	Dyeing (421).....	4	4	3
Textile Chemistry (421).....	2	2	2	Weaving (410, 411).....	4	4	4
Designing (412).....	3	2	2	Military Drill (602).....	3	3	3
Cloth Analysis (414).....	—	2	2				
Jacquard Designing (413)	—	—	2				
Military Science (601).....	I	1	1				

*Political Economy ends and Senior English begins at the middle of the second term.

Special Courses

Besides students in the usual undergraduate courses, there may be farmers and others of mature age, including graduates of other institutions, who desire to avail themselves of the special privileges offered by the College. To such persons the opportunity is offered, under the advice of the director of the department in which work is contemplated, to pursue special lines of study or investigation in any of the subjects taught in the College, provided attention can be given to them without detriment to the regular classes. Such special students will be admitted after they have satisfied the director of the department that they are qualified to pursue the work with profit.

Special students are excused from military duty, but are subject to the general regulations of the College requiring good conduct and diligent prosecution of the course selected. They are not admitted to barracks, but rooms and board may be secured in the community at reasonable rates. They will be required to pay the usual fees, except the price of the uniform and board in barracks.

Special Course in Electrical Engineering

Students desiring to take a special course in electrical engineering should remember that no one can hope to become an electrical engineer who has not the necessary foundations in mechanical engineering, to which electrical engineering is a superstructure. Two-thirds of an electrical engineer's training must be mechanical. No special classes will be formed, and students desiring to enter the junior class will be expected to be prepared on elementary mechanical drawing, physics and chemistry, and on mathematics, through plane trigonometry. They will be expected to take with the junior class, in addition to their electrical studies, physics, mechanics, mathematics, mechanical drawing and machine shop work. Without these additional branches the student will not be prepared for the more strictly engineering work of the senior year.

To enter the senior class, a student must be proficient in the work of the junior year, in which physics and calculus are completed.

In addition to the electrical subjects prescribed for the

senior year, he must take—unless he is proficient along these lines—mechanics, mechanical engineering and laboratory, machine shop, drawing and machine design.

Students who are not prepared, or are not willing to take the other subjects necessary to successful study of electrical engineering, will not be permitted to take a special course in this line.

Special Textile Course

To meet the demands of southern conditions for a class of young men trained in the finer details of cotton manufacture, a special two-year course has been arranged to accommodate a limited number of students who may not be in a position to take the regular four-year textile course, as scheduled and described on the preceding pages.

The course includes mathematics (beginning algebra), English, freehand and mechanical drawing, carding, spinning, weaving and designing, and is thoroughly practical and allows a greater portion of the student's time to be devoted to the pursuit of textiles in its several branches.

To pursue this course successfully, the student must be well grounded in arithmetic, and should be capable of expressing his thoughts clearly in writing. The student seeking admission to this course must present himself at the College during the regular entrance examination period. September 12th to 17th, 1906, and satisfy his instructors that he is prepared to undertake the work. No student will be admitted after that time. Students must be at least 18 years of age, and must have had at least one year's experience in some cotton mill. They will not be required to perform military duty, but will be subject to the general rules and regulations of the College. Students who have failed in the regular College courses will not be allowed to change to this course. No diploma is conferred upon the completion of this work, but the student receives a certificate showing that he has finished the course.

Course of Study

FIRST YEAR.	Hours Per Week. 1st Term.	Hours Per Week. 2d Term.	Hours Per Week. 3rd Term.
Mathematics (begin Algebra)...	5	5	5
Freshman English.....	5	5	5
Carding and Spinning (theory)..	2	2	2
Carding and Spinning (practical)	3	3	3
Mechanical Drawing.....	3	3	3
Designing.....	3	3	3
Weaving.....	6	6	6
Free-hand Drawing.....	3	3	3
	30	30	30
SECOND YEAR.			
Mathematics, (complete Geom- etry)	5	0	0
Sophomore English.....	3	3	3
Chemistry	3	3	3
Carding and Spinning (theory)..	2	2	2
Carding and Spinning (practical)	6	6	6
Chemical Laboratory.....	2	2	2
Designing	2	3	3
Cloth Analysis and Jacquard Designing	2	3	3
Weaving	5	8	8
	30	30	30

Irregular Courses

Every student is required to pursue one of the regular courses, as scheduled on the preceding pages, unless for special reasons this seems inadvisable or impracticable. In such cases an irregular course may be granted by the Faculty on the following conditions:

1. The course applied for must be such as to fully and profitably occupy the student's time.

2. The application must be accompanied by the written approval of parent or guardian and of instructors in all subjects included in the course.

3. Irregular courses are not granted to students in the preparatory class.

4. Diplomas are not issued to students in irregular courses, but a certificate of proficiency will be given when the work completed is deemed worthy of it.

A student who desires to take an irregular course will be referred to a member of the Faculty, who will advise him in reference to the character of work that is best for him to pursue. After the course has been thus arranged and approved by the Faculty, no other changes will be allowed without the endorsement of his adviser.

Preparatory Courses

If a boy is not sufficiently advanced to enter the freshman class and the President concludes that said boy has not had, and can not get, sufficient school facilities at or near his home to prepare him to enter the freshman class, then he will be allowed to enter the preparatory class. In this class thorough instruction is given in the elements of English, mathematics, history, and geography.

If a boy has had or can get sufficient school facilities at or near his home then he must stand his examination for one of the College classes and, failing to pass the required examinations for the freshman class, will not be allowed to enter the preparatory class, but must return home.

The instruction in this department is under the immediate supervision of the professors of English, mathematics, history, and geology in the College, and is closely articulated with the work of the advanced classes.

The course of study is as follows:

Arithmetic, 5 hours a week.

Algebra, 5 hours a week.

Grammar and Composition, 5 hours a week.

Reading and Spelling, 5 hours a week.

Geography, 3 hours a week for last two terms.

History, 2 hours a week.

Students who satisfactorily complete this course will be advanced to the freshman class. Those who fail to pass to the higher class may review the course the next session. Upon recommendation of the instructors of the department, a student in the preparatory class may be permitted, at any time during the session, to stand examinations for admission to the freshman class.

Reports, Grades and Promotions

Reports of class-standing and discipline are sent to parents at intervals of approximately one month throughout the session. During 1906-1907 these reports will be made up for the periods ending on the following dates, and will usually be mailed to parents about one week later: Oct. 26th and Dec. 14th,* 1906; Feb. 1st, Mar. 8th,* Apr. 19th, and May 31st,* 1907. Dates marked with the asterisk (*) are approximate, depending upon the beginning of the respective term examinations.

The session is divided into three terms, ending Dec. 22d, 1906, March 1st, and June 8th, 1907, respectively. Examinations are held at the close of each term, and reports are sent to parents giving the results of these examinations and also the averages of monthly grades in all subjects pursued by the student. The student must attain at least the pass-mark, 60 per cent., on both examination grade and term average in each term separately and in every subject in his course, in order to be entitled to promotion to the next higher class.

No student is entitled to a second examination in any subject, except by special permission of the Faculty. In case of only one or two failures such permission is usually granted, provided the student's record indicates a reasonable degree of application to his studies.

Students whose conditions have not been removed by the opening of the next session will be required to take the work of the preceding year over, unless for special reasons an extension of time is allowed.

Students who are taking over the work of any year in a regular course, or who for any reason have been put back from a higher to a lower class, are required to take the full work of that class.

A student taking any subject over waives the right to all previous records in that subject, and is placed upon the same footing as students taking the work for the first time.

Parents will be advised to withdraw students who habitually shirk duties.

Degrees, Medals and Honors

The degree of Bachelor of Science (B. S.) will be conferred on any student who satisfactorily completes one of the prescribed four-year courses of study, as tabulated on the preceding pages, and submits an approved thesis not later than June 1st of his senior year. The course pursued is indicated on the diploma.

Distinguished Students.—Students who make first grade (90 per cent. or over) in all studies for any session are designated as *distinguished*, and their names are published in the catalogue of the succeeding year.

Trustees Medal.—The Board of Trustees has established a gold medal to be awarded annually to the best speaker among the representatives of the literary societies at commencement. These representatives are chosen by judges selected by the societies at the annual public exercises in Memorial Hall. The medal is awarded by judges selected by the Faculty. Won in 1905 by D. H. Hill, '06.

Literary Society Medal.—It is customary for the three literary societies to award gold medals annually for excellence in debate, oratory, and declamation. The medals for excellency in debate were won by A. P. Du Bose, Calhoun; H. W. Barre, Columbian; L. W. Perrin, Palmetto.

In oratory by R. F. Gooding, Calhoun; L. E. Boykin, Columbian; D. H. Hill, Palmetto.

In declamation by J. V. Phillips, Calhoun; J. C. Lemmon, Columbian; L. R. Hoyt, Palmetto.

The Chronicle Medals.—*The Chronicle*, the monthly magazine published by the literary societies, also usually awards three gold medals, for the best story, the best poem, and the best essay contributed by students during the year.

The Colors of Battalion are awarded at the close of each session to the best drilled battalion, and are carried by it during the succeeding session. In June, 1905, this distinction was won by the First Battalion, B. O. Kennedy, Cadet Major.

A blue silk C. A. C. Flag is awarded June of each year to the best drilled company, and carried by it during the succeeding year. This was won in June, 1905, by Company "C," A. J. Speer, Captain.

R. W. Simpson Medal.—A gold medal thus designated is awarded annually to the best drilled cadet in the freshman, sophomore and junior classes. This medal was won in 1905 by Cadet E. B. Brown, class of 1908.

Publication in Official Army Register.—The names of the three graduates most distinguished in the Military Department each year are published in the Official Army Register of the succeeding year. At the end of the session 1904-1905, the names of H. W. Barre, B. O. Kennedy and E. R. McIver were published.

The Commandant is also required to report annually to the War Department the names of the three cadets most eligible for appointment as officers in the United States Army. At the end of session 1904-1905, H. W. Barre, B. O. Kennedy and E. R. McIver were recommended.

Second Lieutenancy U. S. Army.—General Orders, No. 39, War Department, contains the following paragraph:

“The reports of the regular inspections of the colleges and schools to which officers of the Army are detailed in pursuance of law as principals or instructors will annually hereafter be submitted to the General Staff for its critical examination, and the Chief of Staff shall report to the Secretary of War, from the institutions which have maintained a high standard, the six institutions whose students have exhibited the greatest interest, application, and proficiency in military training and knowledge. The President authorizes the announcement that an appointment as second lieutenant in the Regular Army from each one of the said six institutions will be awarded to an honor graduate who has taken a military course the year, provided that sufficient vacancies exist after caring for the graduates of the Military Academy at West Point and the successful competitors in the annual examination of enlisted men.”

The term “honor graduate” signifies any graduate who would rank as one of the first five of his class.

Fees and Expenses

The regular fees and charges for the session of 1906-1907 will be as follows:

Incidental fee.....	\$ 5 00
Medical fee.....	5 00
Uniform	23 00*
Board and washing.....	67 52
Breakage fee.....	3 00
Tuition	40 00
Total	\$143 52

These charges must be paid in quarterly installments as follows:

September 12th, 1906.....	\$62 88
November 16th, 1906.....	26 88
January 30th, 1907.....	26 88
April 5th, 1907.....	26 88

Remittances should be made in cash, or by money order or New York exchange—*not by local check*—to Dr. P. H. E. Sloan, Treasurer, Clemson College, S. C. Banks charge exchange on local checks.

A deduction will be made for board and washing only when a student is absent one month or more.

The breakage fee is a deposit to cover damage or destruction of College property, and any amount remaining to the credit of a student at the end of the session will be returned to him. Whenever College property is damaged the cost of repair is charged to the individual student, if the responsibility can be determined. Otherwise the cost is divided equally among all the students. Any student whose breakage account exceeds \$3.00 will be required to make another deposit.

A fee of \$1.50 is charged for diploma, payable before graduation.

The above charges do not include cost of books and stationery, which, however, may be obtained at the Cadet Exchange at wholesale prices.

Each student must provide himself with 4 sheets, 2 blankets, a comfort, 6 towels, 1 pillow, 2 pillow cases. Beds are single width.

*The price of uniform is subject to market fluctuations.

Free Tuition

Section 1120, Revised Statutes of South Carolina, 1893, Vol. I., setting forth the powers and duties of the Board of Trustees, contains the following provision:

"They shall charge each student a tuition fee of forty dollars per annum; indigent students shall not be required to pay said tuition fee."

In accordance with this law, residents of South Carolina are granted free tuition upon presentation of the following certificate, properly signed:

CERTIFICATE OF INABILITY TO PAY TUITION.

THIS IS TO CERTIFY, *That I am unable to pay tuition for my*
 ----- *in the Clemson Agricultural College*
for the session of 1906-1907.

Father or Guardian.

*I hereby certify that, to the best of my knowledge and belief, the
 above statement is true.*

County Auditor.

Certificate blanks will be furnished upon application to the President.

For students receiving free tuition the quarterly charges will be \$10 less in each case than the amounts given above, namely:

September 12th, 1906.....	\$52 88
November 16th, 1906.....	16 88
January 30th, 1907.....	16 88
April 8th, 1907.....	16 88

The total charges for the year in such cases are only \$103.52.

Agricultural Scholarships

By an Act of the State Legislature in the session of 1904, 124 beneficiary scholarships were established, of the value of \$100 per annum each, and apportioned among the counties in the same manner as the members of the House of Representatives.

The law provides "That the said scholarships shall be awarded by the State Board of Education, upon the recommendation of the County Boards of Education of the several counties, to the most worthy and needy young men of such age as is fixed by the Board of Trustees of said College for other students, who shall have passed an approved entrance examination upon the common school branches and made at least sixty per cent. upon such examination; and preference shall be given to those young men who desire to take the agricultural course."

Examination questions are to be prepared by the President and Faculty of the College and sent to the County Board of Education of each county on or before the 15th day of July in each year, with a statement of the number of vacant scholarships to which the county is entitled. The County Board holds the examinations, grades the papers, and forwards them with recommendations to the State Board of Education.

Section 4 reads, "That before applying for said scholarships applicants shall make proof under oath to their respective County Boards of Education, as required by law for scholarships in the South Carolina Military Academy, of their financial inability to attend college, before they shall receive from said Board permission to stand such examination."

The law further provides that these scholarships "shall each continue for the term of four years, or for such length of time as the beneficiary shall be able to maintain himself and comply with the rules of the College; and said sum of one hundred dollars per annum shall be placed to the credit of each of said beneficiaries, and applied towards the payment of his board and other necessary school expenses."

Textile Scholarships for Two-Year Course

Victor Mfg. Co. Scholarship. Established by Lewis W. Parker.

Willimantic Scholarship. "In memory of W. E. Borrows, a friend of mill operatives." Open to any resident of the State in need of assistance, and who is recommended by his employer.

Metz Scholarship, by H. A. Metz, of H. A. Metz & Co., New York.

These scholarships are valued at \$50.00.

County Apportionment

The one hundred and twenty-four scholarships provided for in this institution by the Legislature are apportioned to the Counties of the State according to law, as follows:

Abbeville	3	Hampton	2
Aiken	4	Horry	2
Anderson	5	Kershaw	2
Bamberg	2	Lancaster	2
Barnwell	3	Laurens	3
Beaufort	3	Lee	2
Berkeley	3	Lexington	3
Charleston	8	Marlboro	3
Cherokee	2	Marion	3
Chester	3	Newberry	3
Chesterfield	2	Oconee	2
Clarendon	3	Orangeburg	5
Colleton	3	Pickens	2
Darlington	3	Richland	4
Dorchester	1	Saluda	2
Edgefield	2	Sumter	3
Fairfield	3	Spartanburg	6
Florence	3	Union	2
Georgetown	2	Williamsburg	3
Greenville	5	York	4
Greenwood	3		

GROUNDS, BUILDINGS AND EQUIPMENT

Grounds and Buildings

CAMPUS AND FARM.—The College grounds occupy about 1,122 acres of land, including the campus, sites of buildings and residences, grounds for military drill and outdoor athletics, the College farm, and the Experiment Station grounds. The campus, including about 200 acres, is laid out in walks, drives and lawns, and is shaded by a beautiful grove of native forest trees. The campus was greatly improved during the session of 1904-1905, under the supervision of Mr. G. A. Parker, Vice-President of Parks and Public Reservations of the American Civic Association.

The Main Building, Barracks, Etc.

THE MAIN BUILDING is a three-story brick structure, 130 by 140 feet, trimmed with gray sandstone. It contains twenty-two rooms, including recitation rooms, library and reading room, literary society and Y. M. C. A. Hall, physical laboratory, besides the offices of the President, the Commandant, the Treasurer and a reception room. Adjoining this building is Memorial Hall, the College chapel, which has a seating capacity of about 1,000. It is used for religious services and as an assembly room. In the tower of this building there is a tower clock. The building is provided with steam heat and electric lights.

THE CADET BARRACKS comprise two large brick buildings. One is three stories high and contains one hundred and forty-seven rooms for students, a dining hall 134 by 44 feet, and a kitchen 50 by 37 feet. The other building is 199 by 42 feet, and contains 104 rooms. These buildings are heated by steam and lighted by electricity, and have an abundant supply of pure spring water. The rooms in the barracks are furnished with single width iron cots and other necessary appointments. The dining hall is well supplied with table linen, silver ware, and china, and the kitchen is furnished with modern culinary appliances.

The bath rooms and closets are located in brick buildings apart from the barracks and connected with them by covered gangways.

GYMNASIUM.—A large room in the basement of Agricultural Hall has been set aside by the Board of Trustees for

a gymnasium. During the past year, this room was equipped with well-selected gymnasium apparatus. Among the apparatus are to be found a horizontal bar, parallel bar, spring board, travelling rings, flying rings, climbing rope, horse, low parallels, floor mats and take-off board.

The object of the gymnasium is to give to those students interested in athletics training all the year round, so that they will constantly be in good condition for work on the athletic teams. It is also designed for those students who do not take other forms of exercise and depend upon the gymnasium for their only means of physical development. The work is not required, but is engaged in by a large number of students. A member of the Faculty superintends the work and directs the exercises.

MUSEUM.—On the first floor of Agricultural Hall, the Museum of Natural History is located. During the past year, the museum has been furnished with large cases and the collections of the geologist, entomologist and botanist have been installed.

THE HOSPITAL, located about a quarter of a mile from the barracks, is a wooden building, especially designed for the purpose. It is lighted by electricity, and has a thorough sewerage system. The hospital is in the immediate charge of the Surgeon, who is assisted by an experienced matron and nurses, thus ensuring the best personal attention to each patient.

THE LAUNDRY is a brick building specially constructed and fitted with the improved machinery of a modern steam laundry, and is operated exclusively for students.

Agricultural Buildings

THE AGRICULTURAL HALL is a building 146 by 94 feet. in colonial style, and constructed of red side-cut brick, with columns and trimmings of oolitic limestone. It is furnished with a complete system of electric lights, water and sewer connections, and steam heat; and provides class-rooms and laboratories for instruction in agriculture, horticulture, soil physics, botany and bacteriology, zoology and entomology, veterinary science, dairying and animal husbandry, geology and mineralogy, and offices for the Experiment Station. It also contains a room 40 by 60 feet, with a gallery, for a nat-

ural history museum, and a gymnasium hall of the same dimensions below.

THE HORTICULTURAL GROUNDS embrace an area of thirty acres. Eight acres are devoted to apples for experiment purposes, six acres to peaches, two acres to grapes, two acres to pecans, one acre to plums, seven acres to experiments with small fruits and vegetables, and three acres to ornamental trees, shrubs and flowers.

THE GREENHOUSE is 21x140 feet and is heated by hot water. It is used for class instruction in ornamental horticulture and for experiment work. The house now contains three thousand large pot plants of various kinds and nine thousand small plants used for bedding purposes on the College campus.

Another greenhouse is now being built, with a centre building 30x30 feet, and two wings each 20x30 feet.

THE CANNERY is a frame building 25x35 feet. It is equipped for canning fruits and vegetables of all kinds.

THE VETERINARY HOSPITAL is a two-story frame building 48 by 65 feet, with basement 18 by 30 feet. It is furnished with electric lights, hot and cold water and is heated by means of stoves. The basement contains dissecting room and a small room for hot water plant, coal and general storage. On the first floor are rooms for office, instruments and medicines, toilet, horse shoeing, harness closet, and an examining floor, operating table, soaking vat, three box stalls and three tie stalls. On the second floor are rooms for attendant, pharmacy, storage of grain, kennels and cages for small animals and a hay mow.

Convenient to this building is a shed 24x40 feet, enclosed on three sides, but well lighted, and it has a large hay loft. There is a well-sodded lot containing about two acres connected with the hospital. It is fenced with woven wire and divided into three paddocks. In one of these is an open cattle shed 13 by 32 feet, and a chute used in dehorning, inoculations, and other operations where a herd is to be handled.

THE DAIRY BUILDING is a wooden structure constructed and equipped especially to illustrate the most approved methods of dairy practice.

THE EXPERIMENT STATION DAIRY BARN is a new building, 110 by 38 feet, located on one of the highest elevations

of the College property. It is a thoroughly modern structure from the standpoint of both convenience and sanitary conditions. It has a concrete floor, is lighted by electricity, and contains water in all parts of the building for washing floors, mixing food, etc. It is fitted with 38 Taylor steel stanchions, which are both strong and comfortable. At one end of the building are four 50-ton silos, and the second floor, which has a capacity of 50 tons of loose hay, is equipped with a hay carrier that will elevate a load of hay at a time.

A smaller barn, 50 feet in the rear, provides hospital stalls for sick cows, and also stalls and pens for young calves.

A number of paddocks and pastures have been provided to facilitate the management and to furnish sufficient pasturage for the stock.

FARM BUILDINGS.—The College farm is provided with commodious barns and other farm buildings of modern design, which are described more fully in connection with the equipment for instruction in agriculture.

Mechanical and Electrical Buildings

THE MECHANICAL BUILDING is a substantial brick structure containing about 30,000 square feet of floor space. On the first floor are the mechanical laboratory, machine shop, forge shop, foundry, and the power and light station. On the second floor are the offices and recitation rooms, while the wood shop occupies the whole of a two-story wing, 45 by 100 feet. The third floor is entirely occupied by the division of drawing.

THE ELECTRICAL INSTRUMENT LABORATORY is a brick building of special design, arranged especially for delicate instrument work.

THE DYNAMO LABORATORY is a modern brick structure, 37 by 80 feet. Besides containing the dynamo electric machinery for instructional use, it also contains the electrical engineering lecture room.

Chemical Buildings

THE CHEMICAL DEPARTMENT occupies two buildings. One is a two-story brick structure, 50 by 80 feet, covered with slate, and finished inside with Southern pine. Overlapping this at one corner, and connected with it, is a new and somewhat similar building, 53 by 86 feet, of modern

style and handsome design. This double building constitutes a commodious structure adequate to all the needs of the department. In one wing of the building is located the office of the Secretary of the Board of Fertilizer Control.

Textile Building

THE TEXTILE BUILDING is a two-story brick structure, with basement, of modern cotton mill design and construction. The first floor is occupied by a recitation room, picker, carding and spinning rooms, and an office. On the second floor are the designing and weaving rooms, a laboratory for experimental dyeing, and two offices. In the basement is located the dyeing, bleaching and printing machinery.

Residences and Hotel

THE CALHOUN MANSION, the former residence of John C. Calhoun, is kept in honor of his memory, in accordance with the provisions of Mr. Clemson's will.

RESIDENCES.—Ten two-story brick buildings, nine six-room cottages, and thirty smaller houses, all situated on the campus, furnish residences for professors and other officers of the College.

CLEMSON CLUB HOTEL.—The College Hotel, a frame building, situated on a hill overlooking the campus, is operated as a club by several members of the Faculty. In addition to furnishing a home for the members of the club, it is open the entire year to a limited number of transients.

Water, Light and Heat

THE GENERAL WATER SUPPLY is collected from springs through iron pipes into a reservoir, from which it is pumped into a standpipe one hundred feet high. From this it is distributed through mains to the various College buildings and to all parts of the campus.

THE DRINKING WATER SUPPLY is dumped from a bold spring directly into barracks, in a continuous stream. It is thus furnished fresh, pure and cold. This and all sources of water supply are kept under constant and strict surveillance and the waters are frequently analyzed as a precaution against contamination.

THE SEWER SYSTEM.—All of the larger buildings and a number of residences are connected with an adequate sewer

system, which empties into Seneca River more than half a mile from the campus.

LIGHT AND HEAT.—All of the College buildings and most of the residences on the campus are lighted by electricity furnished from the central power station in the Mechanical building. The seven principal College buildings are heated by steam.

Equipment for Practical Instruction

Agricultural Department

Agriculture

The class room, laboratory and office of the agricultural division are located on the first floor of Agricultural Hall, rooms 11, 12 and 13. The laboratory is supplied with the necessary equipment, for familiarizing students with the more important economic plant seed.

The College farm has a large storage barn provided with silos, a cow barn furnished with various forms of stanchions, a mule barn provided with the most improved forms of stalls and feed-racks, implement and wagon sheds for storage of tools, etc., compost building for making compost in large quantities, and two large cribs for storage of corn.

Among agricultural machinery and implements may be mentioned the following: Self-binder, corn-harvester, Deering ball-bearing mower, Osborne mower, self-dumping rake, check-row corn planter, Buckeye cultivator, B. F. Avery cultivator, Tower cultivator, disc-cultivator, spring-toothed harrow, smoothing harrows, various forms of pulverizers, manure-spreading machines, fertilizer and grain drill, various forms of small fertilizer drills, Planet Jr. drill, two Planet Jr. plows, scientific mill, stone grist mill, Tornado ensilage cutter, small thresher, hand-gin, rock-crusher, road machine, three terrace levels, and a 10-kw. electric motor.

Geology and Mineralogy

The division of geology and mineralogy occupies three rooms on the second floor of the new agricultural building.

The systematic collections contain about 1,800 labeled specimens of rocks, minerals and fossils. These are exhibited in glass cases in the laboratory, and are available to students and public. A collection of the minerals and rocks of South Carolina is a prominent feature of the exhibit. There is also an unlabeled collection of minerals for practice in identifying the more important species at sight, and unlabeled collections of the most important minerals are provided for determinative work in the laboratory.

The laboratory is supplied with water and gas and all

apparatus and reagents necessary for the determination of minerals by means of their chemical and physical properties. A chemical balance, a petrographic microscope, a photomicrographic camera, and all important accessories, are also provided.

The class-room is supplied with large physical wall maps of the world and of all the continents, a complete series of topographic contour-maps furnished by the United States Geological Survey, an 18-inch terrestrial globe, a 20-inch relief globe, a set of geological and geographical relief models, and several hundred lantern slides.

The geological department of the College library contains the principal standard works of reference in geology and mineralogy, and receives all publications of the United States Geological Survey as issued, including annual reports, monographs, geologic folios, and bulletins.

Soil Physics

The soil physics laboratory is located on the ground floor of Agricultural Hall and is provided with apparatus necessary for the determination of water content, absorptive capacity, water-holding power, and other physical properties of soils, and for performing experiments in evaporation, percolation, capillarity, etc., and making mechanical analyses.

Veterinary Science

The veterinary hospital has been described in the account of "Grounds and Buildings" on the preceding pages.

The class room, laboratory and office of the Veterinary division are located in Agricultural Hall, the laboratory and office on the first floor, rooms 15 and 16, and the class room on the ground floor. The laboratory is supplied with microscopes, microtome, incubators, sterilizers, chemicals, skeletons, anatomical specimens, plaster casts, and other equipment for technical work. The lecture room has a concrete floor, elevated seats, and is so arranged that the largest domestic animal may at any time be used before the classes for demonstration purposes.

The veterinary hospital is a frame structure of modern design, 48 by 65 feet, containing rooms for office, drugs and dissecting, besides stalls, feed-bins, water supply and electric lights, and a revolving operating table.

Zoology and Entomology

The laboratory, recitation room and office of this division are on the second floor of Agricultural Hall. The laboratory is equipped with simple and compound microscopes, microtomes, dissecting instruments, photographic outfit, stereopticon, lantern slides and charts. The entomological cabinet contains a large number of injurious and beneficial insects.

The students have access to a small but carefully selected entomological library.

Dairying and Animal Husbandry

The dairy building is provided with steam plant and water works, and everything required for making butter and cheese. In this laboratory are located the leading makes of cream separators, churns, and milk-testers.

The new experiment barn is provided with modern apparatus and conveniences for the proper handling of cattle, and the following breeds of cattle have been recently purchased and placed at this barn for experimental purposes; Ayrshire, Devon, Jersey, Hereford, Polled Angus, Polled Durham; Short-horn (bare-faced dairy strains), Guernsey, Holstein; also six each of registered Shropshire and Southdown sheep.

Botany and Bacteriology

These laboratories are located on the third floor of Agricultural Hall, rooms 21, 22, and 23. They contain a good equipment for satisfactory work in botany and bacteriology, including twenty-five dissecting microscopes, fourteen compound microscopes, student dissecting sets, student microtomes, Zimmermann microtome, embedding baths, balances, water still, incubator, Arnold and Koch sterilizers, autoclave, dry ovens, anaerobic apparatus, cameras for ordinary and photo-micrographic work.

The students have access to a small botanical library.

A creditable beginning has been made in collecting a herbarium. This now includes plants collected in the State, plants received by exchange, and a donation of about twenty-five hundred mounted specimens from Dr. A. P. Anderson, which includes many species not present in the flora of South Carolina.

Mechanical and Electrical Department

Electrical Engineering

ELECTRICAL INSTRUMENT LABORATORY.—This is a separate brick building, designed especially for delicate electromagnetic work—no iron, steel or other magnetic substances having been used in its permanent construction. It contains, in addition to all necessary elementary apparatus, the following instruments: Kelvin-Deka ampere balance, Kelvin four-coil astatic galvanometer, four D'Arsonval dead-beat galvanometers, large ring tangent galvanometer, three Elliott Brothers' standard resistance sets, Elliott Brothers' standard tangent galvanometer, Queen's standard ballistic galvanometer, Nalder Brothers' sensitive galvanometer, Rowland-D'Arsonval ballistic galvanometers, Willyoung standard condenser, Becker's chemical balance, Cahart-Clark standard cell, thermometers, Wheatstone bridges, storage and primary cells, etc.

DYNAMO LABORATORY.—To meet the demands of larger attendance and increased equipment, a new building has been provided in which is installed the dynamo-electric machinery. This building also contains a class room and a dark room for photometric work. It is a single story brick structure, 37x80 feet, with basement for supply rooms.

The main floor is divided into a class room 25x35 feet, and a dynamo laboratory room 53x35 feet. The building is heated by steam and lighted by inclosed arc and incandescent lamps.

The lecture room has elevated seats and is equipped with a complete line of illustration models, apparatus and electrical instruments. It contains an electro magnet capable of supporting the weight of two tons.

The Dynamo Laboratory contains, in addition to rheostats, speed counters, switches, and other small apparatus, the following machines and instruments:

50 H. P. high speed McEwen automatic engine.

Direct Current Generators—15 kilowatt Mather, 17 kilowatt Lundell, 2 1-2 kilowatt Crocker-Wheeler, two 2 kilowatt Kester.

Direct Current Motors—15 and 10 H. P. Kester, three 1-6 H. P. Crocker-Wheeler.

Direct Current Instruments—Weston laboratory standard voltmeter, set of Weston portables, Jewell ammeter and voltmeter, Weston switchboard ammeter and voltmeter, Thompson recording wattmeter, etc.

Arc Lighting Apparatus—Brush and Thompson-Houston generators, Genl. Elec. Co. constant current transformer, principal makes of open and inclosed arc lamps.

Alternating Current Apparatus—15 kilowatt G. E. Co. 2 and 3 and 6 phase revolving field generator complete with marble switchboard and full set of indicating instruments.

7 1-2 kilowatt G. E. Co. single 2 and 3 phase rotary converter; 7 kilowatt 3 phase converter built by students.

Genl. Elec. Co. 2 and 3 phase induction motors. Three, 3,000 watt constant potential transformers. Assortment of smaller transformers, motors and models.

Alternating Current Instruments—Two Weston and one Genl. Elec. wattmeters, Weston standard A. C. voltmeter, 6 Thompson inclined coil ammeters and voltmeters, Cardew and electrostatic voltmeters, Kelvin ampere balance, Siemens electro-dynamometer, Stanley hot wire ammeter.

Miscellaneous—Two Schaeffer & Budenberg tachometers, leading types of lightning arresters, fuse testing apparatus.

The dark room contains a complete outfit for high potential, high frequency and X-ray work, and a Deshler-McAllister central station type photometer, with rotating stand for incandescent lamp testing.

COLLEGE POWER AND LIGHT PLANT.—The machinery in the dynamo laboratory is driven by the 50 horse power engine or two 20 horse power motors. Steam and electric power for these is furnished by the power plant situated in a neighboring building. This plant consists of an 85 horse power Corliss engine, driving a 40 kilowatt Westinghouse generator and a 30 kilowatt G. E. Co.'s multipolar generator. This station furnishes power to 20 motors, ranging from 3 to 30 horse power. These motors are used at different points on the College property for a variety of purposes, such as pumping water, driving agricultural machinery, supplying power for machine shop, wood shop, textile department, etc. Several of these are at a considerable distance from the power station, thus furnishing examples of electrical trans-

mission of power. Two of these, 7 horse power each, were built by students. In addition to power for driving motors, the same generators furnish electricity for lighting the barracks and other College buildings. Students have access to this plant, and are thus enabled to see the practical workings of a combined electric light and power plant, and to test its efficiency.

Mechanical Engineering

This laboratory occupies a room 41 by 45 feet, and contains the following equipment:

For Steam Engineering—15 horse-power horizontal, locomotive type boiler; 6 horse-power vertical boiler; Erie 6 horse-power plain slide-valve steam engine; 6 horse-power vertical steam engine built in the shops; Payne 15 horse-power high speed automatic engine; Corliss cross-compound condensing steam engine arranged so that either side may be run condensing or non-condensing and each side independent of the other; Wheeler surface condenser with combined air and circulating pumps; set of steam-gauge testing apparatus; Carpenter's separating steam calorimeter; two throttling steam calorimeters; six steam engine indicators of various makes; two standard injectors.

For Hydraulic Engineering—Two hydraulic rams; Pelton water motor; power triplex pump; three duplex pumps of different makes; three weirs; recording altitude gauge; 6 pressure and altitude gauges.

For Compressed Air—Clayton air compressor with jacketed cylinders; improved air motor.

For Fuel and Lubricants—Carpenter's fuel calorimeter, with scales, balances, and oxygen generating devices; standard viscosimeter.

For Testing Building Materials—100,000-pound Olsen automatic vertical testing machine driven by 5-horse power Westinghouse electric motor, and fitted for tension, compression, and transverse testing; Fairbank's cement testing machine; 3,000-pound transverse testing machine. The laboratory also contains a 5-horse power Otto gasoline engine, an Ericsson hot-air engine, a 6-horse power transmission dynamometer, graduated to read horse power direct and built by students, and an assortment of standard thermometers,

weights and measures. The apparatus is so arranged that any of it may be used for separate or combined tests, or for any original investigations. Besides the equipment in this room, the electric light and power plant, the heating plant of the College and barracks, the isolated plants at the dairy, horticultural grounds and pumping station are available for instructional purposes.

Physics

The physical lecture room and laboratory is situated in the main College building, is 33 by 60 feet, and is well equipped with apparatus for both the lecture and experimental work of a general course in physics.

Drawing and Designing

The drawing rooms occupy the entire third floor of the Mechanical Engineering building. The third and fourth floors of the tower are also used as a dark room and blueprint room respectively. A good selection of drawings and models in these rooms are of great benefit to the student in his work. These rooms are equipped to accommodate from 20 to 36 students at a time, with cases, boards and T-squares for over 375. Members of all classes are required to furnish their own drawing instruments. All instruments used by students must be approved by the instructor in charge; an inferior grade of instruments will not be acceptable. Students are advised to buy their instruments at the Cadet Exchange, where samples can be seen and wholesale prices obtained.

Forge and Foundry

FORGE SHOP.—This is a room 37 by 60 feet, situated in a wing of the Mechanical building. It is equipped with 18 Buffalo down draft forges and steel-faced anvils, with sets of hammers, tongs, swages, fullers, flatters, etc. Continuous blast is furnished by a Buffalo blower driven by a 15 H. P. electric motor, the down draft being produced by a 60-inch Buffalo exhaust fan. The shop is also supplied with vises, swage blocks, emery wheel, bending cone, drill-press, bolt shear, etc.

FOUNDRY.—This building occupies a space 43 by 76 feet and is free from posts or other obstructions. It is equipped with a 26-inch Victor Collian cupola, a Millett's core oven, a

two-ton post crane, 8 improved molder's benches, an 18-inch brass furnace, with its usual complement of crucibles, tongs, etc., full set of molder's tools for the accommodation of 20 students, besides the usual accessories to the foundry, such as ladles, flasks, etc.

Machine Shop

The machine shop is located in the southwest wing of the Mechanical building, which wing is 45 by 100 feet, well lighted, heated and ventilated.

It contains seventeen benches, with vises, 105 kits of tools and the following machine tools: 1 18-in.x12-foot engine lathe; 1 18-in.x8-foot engine lathe; 3 14-in.x6-foot engine lathes; 4 14-in.x6-foot Lodge & Shipley lathes; 2 14-in.x6-foot F. E. Reed compound rest engine lathes; 2 14-in.x6-foot Hendey compound rest engine lathes; 1 10-in.x4-foot F. E. Reed pattern maker's lathe; 1 15-in.x8-foot speed lathe; 1 Cincinnati Universal Milling machine, No. 3, all power feeds; 1 Lodge and Davis' Universal Milling machine; 1 18-in. drill press; 1 28-in. back geared drill press; 1 22-in.x6-foot Powell planer; 1 Cincinnati cutter and tool grinder; 1 15-in. Gould and Eberhardt crank shaper; 1 dry emery grinder; 1 12-in. power hack saw; 1 36-in. grind-stone; 1 22-in. Leland and Faulconer wet emery tool grinder; 1 American twist drill grinder; 1 10-in. slotting machine, built by New Haven Mfg. Co.; 1 fan; 1 forge. The tool room in connection with the shop contains all tools, etc., necessary for use with the machines.

The 7 H. P. motor which drives the machinery was built by students.

Woodwork

The wood shop occupies the two-story wing on the east side of the Mechanical Engineering building, 45 by 100 feet. The lower floor contains the freshman class room, equipped with fifteen work benches and sets of tools, six turning lathes, with tools for each, and other tools for hand work. On this floor is also the planing mill machinery, consisting of a double roll planer, power rip and cut-off saws, band saw, scroll saw, 16-inch jointer, moulding machine, mortis-

ing machine, tenoning machine, emery grinder, lathe with 12-foot bed, etc.

The upper floor is devoted principally to the work for the sophomore class, and is fitted up with fifteen work-benches and ninety sets of tools—one set for each student; six 10-in. turning lathes, large pattern lathe, combination saw and boring machine, double head shaper, panelling machine, carving machine, jig-saw, universal trimming machine, special door and sash clamps, steam glue pots, miter cutters, etc. The power is supplied by electric motors conveniently located in the various rooms. A large lumber yard and dry-kiln provide seasoned lumber at all times.

Chemical Department

The original Chemical Laboratory is a two-story brick building, 50 by 80 feet, covered with slate and finished inside with southern pine. Overlapping this at one corner, and connected with it by a glass-enclosed passage, is a new and somewhat similar building, 53 by 86 feet, of modern style and handsome design. This double building, which is well ventilated, heated by steam, and lighted by electricity, constitutes a commodious structure adequate to all the needs of the department.

On the first floor of the old building, which is used for academic work, there are five rooms. Two of these, connecting with each other, are employed as a laboratory for the agricultural seniors. Of the other rooms on this floor, one is a laboratory for post-graduate students and one a balance room, while the third is reserved for such use as the ever-increasing demands upon the department may require.

On the second floor of this building, there are two large laboratories, one for the juniors in analytical chemistry, the other for the sophomores in general chemistry. A third and smaller room is used as a balance room.

The junior laboratory will accommodate seventy-two students, thirty-six at a time; the sophomore laboratory, one hundred and twenty students, sixty at a time. The laboratories are all provided with hoods for carrying off noxious gases, convenient working tables, water, gas, electric lights, and all necessary appliances for experimental work.

The basement of the building is used for assaying, for the

preparation of distilled water and for storage. The air pump and the mixer of the gas machine for supplying the laboratories with gas are placed in this basement and connected with the generator, which is buried eighty-five feet from the building.

On the first floor of the new building there are nine rooms, all of which are appropriated to the chemical work of the State and of the Experiment Station. On one side of the wide hall, which extends the entire length of the building, are the rooms for the analysis of fertilizers. Three of these rooms are used respectively for the determination of phosphoric acid, nitrogen and potash; the fourth as a balance room; the fifth and last as a sample room. On the other side of the hall there are four rooms. The largest of these is used for the agricultural analysis of the Experiment Station. Adjoining this is a balance room, in which provision is made also for the optical and electrolytic apparatus. Of the remaining rooms, one is used for water analysis, the other as an office.

On the second floor of this building there are seven rooms; a lecture room, and six smaller rooms which are used for recitations, cabinets, apparatus, chemicals, library and professor's laboratory.

The lecture room will seat one hundred and seventy students, the seats being arranged in tiers.

The hoods in this building are all connected by earthenware pipes with a tightly-built room just under the roof, over which there is a large ventilator.

The rooms in the basement are used for assaying ores, for the preparation of agricultural products for analysis, and for storage. An electric motor located in one of these rooms supplies the power which drives the machinery for grinding and pulping samples of vegetable substances.

Department of Textile Industry

The building is a brick structure of modern cotton mill design, 168 by 75. It is of the slow burning type, built according to fire insurance regulations, after plans of an experienced mill engineer. The building, although designed for educational and experimental purposes, containing offices, lecture rooms and laboratories, retains the more prominent

features of a typical southern cotton mill. This affords the students an opportunity of gaining many points of valuable information in connection with mill construction, along with the manipulation of cotton fibres and the study of cotton mill processes and operations.

The first floor is occupied by the picking, carding and spinning machinery, a lecture room, the main office, an exhibit room and the departmental library. The machinery on this floor is driven by two electric motors, one a 30 H. P. 220 volt direct current Westinghouse motor, driving the carding machinery, and a 20 H. P. 220 volt direct current General Electric Co. motor, driving the spinning machinery.

The second floor is occupied by the experimental dyeing laboratory, hand looms, power looms, a lecture room and two offices. The power machinery on this floor is driven by a 20 H. P. 220 volt direct current General Electric Co. motor.

The basement, which is situated under the right hand half of building, is occupied by the dye-house, and is nicely equipped for that purpose.

The building is equipped with a system of "Vortex" humidifiers from the American Moistening Co.; steam heating system and automatic fire sprinklers from The D. A. Tompkins Company; shafting, pulleys and hangers, from Jones and Laughlin, Ltd., and from T. B. Wood's Sons.

Carding Division

Pickers—One Atherton automatic feeder; one Atherton breaker; one Atherton finisher lapper, with evener motion.

Cards—One Saco & Pettee 40-in. revolving top flat card; one Mason 40-in. revolving top flat card; two traverse wheel grinders; two drum traverse grinders; stripping and burnishing rolls; two complete sets of carder's tools.

Combing—One Mason sliver lap machine; one Mason ribbon lap machine; one Mason six-head combing machine.

Railway Heads—One Saco & Pettee railway head, with evener motion, stop motions, and metallic rolls; one Mason railway head, with evener motion, stop motion, and metallic rolls.

Drawing—One Saco & Pettee drawing frame, 4 deliveries, stop motions, and metallic rolls; one Mason drawing frame, 4 deliveries, stop motions, and metallic rolls.

Fly Frames—One Saco & Pettee 12-in.x6-in. 40 spindle slubber, with latest differential motion; one Saco & Pettee 8-in.x4-in. 60 spindle intermediate roving frame, with latest differential motion; one Saco & Pettee 7-in.x3 1-2 in. 80 spindle fine roving frame, with latest differential motion; one Woonsocket 6-in.x2 1-2-in., 96 spindle jack roving frame, with Daly's improved differential motion.

Spinning Division

Ring Spinning—One Saco & Pettee combination warp and filling ring spinning frame, 128 spindles; one Mason combination warp and filling ring spinning frame, 112 spindles; two Fales & Jenks combination warp and filling ring spinning frames, 80 spindles each, designed for spinning fine counts; two Whittin combination warp and filling ring spinning frames, 80 spindles each.

Mule Spinning—One Mason self-acting spinning mule, 120 spindles, 1 3-4-in. gauge, with all latest improvements.

Spooling—One Draper spooler, 40 spindles; one Saco & Pettee spooler, 72 spindles; one Barber & Coleman knitter.

Twisting—One Draper combination wet and dry twister, 48 spindles; two Fales & Jenks wet twisters, combination filling and taper top wind, 70 spindles each.

Winding—One W. W. Altemus & Son bobbin winder; one Atwood-Morrison Co. bobbin winder; one Geo. W. Payne & Co. skein winder; one Universal cone and tube winder.

Reeling—One D. A. Tompkins Co. adjustable reel, 50 spindles.

Warping—One Draper section warper; one Draper ball warper.

Beaming—One Entwistle beaming machine.

The divisions of carding and spinning are equipped with all necessary supplies, such as doff boxes, roving cans, bobbins, spool, cops, cones, tubes and change gears for all machines.

Weaving Division

Hand Looms—Seventeen hand looms, with 4x4 box motion, and 30 harness shedding engines, arranged for four beam work.

Power Looms—One 40-in. Northrop cam loom, with warp

stop motion and automatic filling magazine; one 28-in. Northrop cam loom, with warp stop motion and automatic filling magazine, also fitted with Stafford 20 harness dobby; one Mason 36-in. gingham loom, with 4x1 box motion; one Mason 40-in. loom, with Stafford 20 harness dobby, also arranged for center selvage motion; one Mason 44-in. fancy cotton loom, with 24 harness dobby; one Stafford 30-in. fancy cotton loom, with 20 harness dobby and leno attachment; one Stafford 30-in. dress goods loom, with Stafford 400 hook, single lift, swing cylinder, jacquard; one Knowles 40-in. "Gem" loom, with 30 harness dobby, 4x4 box motion; one Crompton & Knowles 36-in. fancy cotton towel loom; one Crompton 65-in. loom, 4x1 drop box motion, fitted with 624 hook double lift, swing cylinder, jacquard, tied for weaving table damask; one Whitin 40-in. cam loom, arranged to weave up to 6 harness; one Whitin 40-in. fancy cotton loom, fitted with 20 harness dobby; one Whitin heavy pattern duck loom; one Knowles 30-in. fancy cotton loom, 2x2 box motion, 16 harness dobby; one Kilburn & Lincoln 40-in. loom, 4x1 box motion, arranged for dobby; one Kilburn & Lincoln 40-in. loom, 2x2 box motion, arranged for dobby.

Dressing—One Davis & Furber dresser, complete.

Jacquard card cutting—One Jno. Royle, French index, foot power card cutter.

This division is also equipped with one floor stand, fitted with 8 harness dobby and leno attachment, built specially for illustrating leno weaves; one jacquard tying-up frame; warping pegs; beaming frames; drawing-in frames; extra heddles and heddle frames; reeds; change gears, etc.

Division of Textile Chemistry and Dyeing

The work in textile chemistry and dyeing is carried on in an experimental laboratory and a practical dye-house. These are equipped with the necessary apparatus and chemicals for instruction in organic chemistry, scouring, bleaching, dyeing, mercerizing, printing, etc.

The experimental laboratory is fitted with appropriate work-tables furnishing accommodations for sixty-four students working by detachments. Each table is supplied with the necessary arrangements for gas and water, and drawers

and lockers in which may be stored apparatus and unfinished experiments.

Dye-house—Nine dye vats, four fitted with copper heating coils, one for peroxide bleaching; one Schaum & Uhlinger self-balancing hydro-extractor; one steaming and ageing box; one mercerizing apparatus for yarn; one calico printing machine; one 20 gal. copper kettle; one set copper measures; one dry closet. There is also an equipment of reels, yarn testers, analytical balances, etc., and necessary instruments for experimental purposes.

Department Library

For the use of students and instructors, a reading room in the textile building has been fitted up and is furnished with some of the more important books of reference relating to the textile industry, and also with the leading periodicals relating to the subject. All journals and periodicals are contributed. There is also in this room, an exhibit of the work done by the students in the different divisions of the department and an equipment of old hand machinery, illustrating the methods used before the introduction of power machinery. The room is open every week day throughout the session.

Civil Engineering

The collection of field instruments contains the following: Engineer's transit, with stadia and solar attachment; surveyor's compass, 2 twenty-inch wye levels, railroad compass, 2 six-inch vernier compasses; plane table with nine-inch telescope, vertical circle and stadia; drainage level, current meter with electric recorders, sextant, anervoid barometer, 2 twelve-foot self-reading leveling and stadia rods, twelve-foot New York leveling rod, twelve-foot Boston leveling rod, cross-section rod with clinometer, two surveyor's chains, engineer's chains, 2 standard 100-foot steel tapes, sixty-six foot steel tape, fifty-foot steel tape, and a full supply of ranging poles, flag poles and other accessories.

The office equipment includes planimeter, slide rules, and drafting instruments and appliances. In addition to the drawing done under the immediate direction of the instructor in civil engineering, the regular work in drawing and designing provided for students pursuing this course, is ar-

ranged with special view to their needs. The engineering laboratory and the shops and drawing rooms in which the civil engineering students receive an important part of their instruction, are described under the equipment of the mechanical and electrical department.

Library*

In the main building is a series of rooms specially constructed for the use of the library. There are now upon the shelves 6,850 volumes, classified under the various heads of literature, history, biography, science, and reference books. In addition to these in the general library, there are 1,493 volumes in Experiment Station and department libraries of the College. There are also about 2,400 government publications, together with about 3,500 pamphlets. The library is supported by an annual appropriation, and the number of books is added to each year.

In connection with the library there is a reading room in which the students have access to nineteen of the leading weekly and monthly periodicals, twelve technical journals, the principal daily papers of the state and many of the county papers.

The Clemson Relics

A collection of thirty-seven oil paintings, collected by Mr. Clemson, chiefly in Holland, together with a number of additional portraits, may be seen in the President's office in the Main building.

The Calhoun Relics

Several pieces of furniture and other interesting relics, formerly the property of Mr. Calhoun, are carefully preserved in the Calhoun Mansion, where they may be seen by visitors to the College.

*See donations to library, page 125.

DEPARTMENTS OF THE COLLEGE
DETAILED DESCRIPTIONS OF COURSES



Departments of the College

For administrative purposes, the College is divided into seven departments, each presided over by a director, who has general supervision of all the work and interests of his department. The departments comprise the various divisions indicated below, which are in the immediate charge of the professors, associate and assistant professors, and instructors of the respective departments.

Numbers in parentheses refer to description, beginning on page 79.

1. Agricultural Department

Agriculture (100-105).

Geology and Mineralogy (110-117).

Horticulture (120-122).

Veterinary Science (130-139).

Zoology and Entomology (140-142).

Dairying and Animal Husbandry (150-162).

Botany and Bacteriology (170-175).

2. Mechanical and Electrical Department

Electrical Engineering (200-203).

Mechanical Engineering (210-215).

Physics (220-222).

Drawing and Designing (230-239A).

Forge and Foundry (240-242).

Machine Shop (250-251).

Woodwork (260-262).

3. Chemical Department

Chemistry (300-306).

Metallurgy (310-311).

4. Textile Department

Carding and Spinning (400-409).

Weaving and Designing (410-414).

Textile Chemistry and Dyeing (420-421).

5. Academic Department

English (500-504).

History and Political Economy (510-515).

Mathematics and Civil Engineering (520-537).

6. Military Department

Military Science and Tactics (600-602).

7. Preparatory Department

Detailed Descriptions of Courses

Agricultural Department

Professor Harper, Director.

General Agriculture

Professor Harper.

Assistant Professor Newman.

100. Foundations of Agriculture

FRESHMAN CLASS; COURSES I., II.

A preliminary and general practical survey of the geological and physiographical principles upon which agriculture is based, given by the division of geology and mineralogy.

A preliminary and general practical survey of the zoological principles upon which agriculture is based, given by the division of zoology and entomology.

A preliminary and general practical survey of the botanical principles upon which agriculture is based, given by the division of botany and bacteriology.

101. Foundations of Agriculture

FRESHMAN CLASS; COURSES III., IV., V., VI.

A preliminary and general practical survey of the geological, zoological and botanical principles upon which agriculture is based, given by the division of general agriculture.

102. Soil Management and Farm Crops

SOPHOMORE CLASS; COURSES I., II.

As the student progresses in the study of the natural sciences, the application of these sciences is taught in their relation to the art of agriculture, special stress being placed upon the protection, improvement, fertilization, and all manipulations of the soil in the preparation for planting and in the cultivation of crops.

103. Rural Economy and Sociology

JUNIOR CLASS; COURSE I.

Lectures upon the employment and management of labor, farm equipment, and farm management. The lectures include the interrelations of economics and agriculture, and the social status and problems of the rural community.

104. Soil Physics

JUNIOR CLASS; COURSE I.

The work in soil physics enables the student to understand the effects of the different methods of treatment of soils, and the influence of these methods upon moisture, texture, aeration, fertility and production. The course is supplemented by laboratory determinations of specific gravity, relative specific gravity, water-holding capacity, capillary power, and rate of percolation of various soils; experiments upon rates of evaporation from the surface, and the effects of different mulches and methods of cultivation upon retention of soil moisture; mechanical analysis of soils.

105. Agricultural Research and Literature

SENIOR CLASS; COURSE I.

The senior class will study the results of experiment work, conduct experiments, interpret results, and prepare them in bulletin form. Research in agricultural reports and kindred literature will be required upon assigned subjects, the results to be reported in writing.

The Agricultural Society

Attendance upon the meetings of the College Agricultural Society will be required of all students in the agricultural courses.

Geology and Mineralogy

Professor Calhoun.

110. Elementary Mineralogy

JUNIOR CLASS; COURSE V.

Laboratory study of crystal forms by the use of models and natural crystals; chemical and physical properties of minerals; practice in the determination of unknown specimens. This is a brief course, intended to give the student an adequate conception of the science of mineralogy together with some practical acquaintance with the more common and important minerals.

111. Mineralogy

JUNIOR CLASS; COURSE III.

A comprehensive course in crystallography, physical and chemical mineralogy, and systematic descriptive and determinative mineralogy. Crystallography is taught by lectures and text-book, with laboratory work on the collections of models and natural crystals; also physical, optical, and chemical properties of minerals, and descriptive mineralogy, covering the more important mineral species. Much of the laboratory work is devoted to the determination of minerals by means of their physical and chemical properties, by comparison with labeled specimens of the systematic collection, and by the use of unlabeled

collections for practice in identifying minerals at sight. This course gives a sufficient knowledge of mineralogy for the geologist, metallurgist, mining engineer, or chemist, and will enable the student to readily identify all but the rarer minerals.

112. Elementary Geology

SENIOR CLASS; COURSES I., II., IV., V.

The elements of dynamical, structural and historical geology. The influences of geologic phenomena on man are emphasized, particularly in the study of rock-decomposition and the formation of soils, the processes of erosion and deposition, and the resultant topographic forms.

113 General Geology

JUNIOR CLASS; COURSE III.

A broad course in the elements of general geology. Special stress is laid on structural and dynamical geology in their relations to the formation of rocks and rock-structures, the metamorphism of rocks, and the deposition of minerals and ores. In historical geology special attention is given to the development of the North American continent.

114. Petrography

SENIOR CLASS; COURSE III.

A study of the structure, composition, origin, and classification of various families of rocks, their distribution, modes of occurrence, and geological importance; microscopic characters of rock-forming minerals, and the use of the petrographic microscope. The course is supplemented by work in the field and laboratory, and the student becomes familiar with rocks and with practical methods of investigation, and their applications to the problems of lithological geology.

115. Economic Geology

SENIOR CLASS; COURSE III.

A general survey of geological products of value, including metallic and non-metallic minerals, and building stones; their origin and nature, distribution, modes of occurrence, and methods of exploitation. The course deals particularly with the economic deposits of North America, with briefer reference to those of other countries for purposes of comparison and for the elucidation of problems of origin, exploitation, etc. The student is required to read and prepare abstracts of the more important monographs and reports.

116. Practical Geology

SENIOR CLASS; COURSE III.

Field study and reports of geological processes and phenomena, rocks and rock structures, both original and secondary, accompanied by laboratory exercises by means of specimens, models, photographs,

maps and sections; interpretation and representation of geologic phenomena, and training in the principles and methods of geological surveying, the construction of geological maps and sections, and the preparation of reports.

For description of equipment, see page 59.

117. Agriculture

SENIOR CLASS; COURSE I.

A general course on the soil-making minerals and rocks. Special emphasis will be laid upon the relation of soils to plants. The origin of soils will also be studied.

Horticulture

Associate Professor Newman.

Instruction is given in the sophomore, junior and senior classes. The theoretical work is illustrated by practical exercises in the garden, orchard, vineyard, greenhouse, and ornamental grounds of the College. These practical exercises enable the student to become familiar with all the details of the work.

120. Propagation and Management of Nursery Stock

SOPHOMORE CLASS; COURSE I. JUNIOR CLASS; COURSE II.

Lectures are given on the following subjects and special attention is paid to the practical work along these lines. Stratification of seeds; sowing seeds; seed testing; separation and division; budding and grafting; grading and storing nursery stock; nursery management.

121. Vegetable Gardening

JUNIOR CLASS; COURSES I., II.

Construction of hot-beds and cold-frames, their use and management; preparation of the soil; fertilizing; seed sowing; transplanting and cultivation; gathering; storing and marketing; spraying and spraying equipment.

Text-book: Principles of Vegetable Gardening, by L. H. Bailey.

122. Ornamental Horticulture and Floriculture

SENIOR CLASS; COURSE I.

The work includes ornamental horticulture and floriculture; the propagation and care of ornamental plants; general greenhouse work and management.

For descriptions of buildings, grounds, and equipment, see pages 55 and 56.

Veterinary Science

Associate Professor Klein.

Assistant Nelson.

130. Anatomy and Histology

SOPHOMORE CLASS; COURSE II.

A laboratory course in gross and microscopic anatomy, arranged as an introduction to the study of the principles of stock judging and physiology.

Reference book: Compend of Equine Anatomy, by Wm. R. Ballou.

131. The Horse

SOPHOMORE CLASS; COURSES I., II.

Practical study of the breeds and types of horses and mules, including principles of breeding; management; judging by score card; examination for soundness; breaking; biting; saddling; gaiting and harnessing.

132. Veterinary Physiology

JUNIOR CLASS; COURSE II.

While this course embraces the study of all the animal functions, especial attention is given to digestion, nutrition, reproduction, milk secretion, and locomotion, these being of greatest importance in the animal industries.

Text-book: A Manual of Veterinary Physiology, by F. Smith.

133. Surgical Therapeutics

JUNIOR CLASS; COURSE II.

In this course hemorrhages, inflammation, wounds, sprains, bruises and other accidental conditions are considered, together with the use of antiseptics, and the treatment of diseases of the hoofs.

134. Physiological Demonstrations and Microscopy

JUNIOR CLASS; COURSE II.

A laboratory course in which some of the vital functions are demonstrated and the secretions and excretions studied microscopically.

135. Pathology and Pharmacy

JUNIOR CLASS; COURSE II.

136. Sporadic Animal Diseases

SENIOR CLASS; COURSE II.

137. Contagious Animal Diseases

SENIOR CLASS; COURSE II.

138. Hygiene and Sanitary Science

SENIOR CLASS; COURSE II.

Text-book: A Manual of Veterinary Hygiene, by F. Smith.

139. Veterinary Clinics

SENIOR CLASS; COURSE II.

A free clinic is held at the veterinary hospital every Monday afternoon of the session, except on holidays and during examinations. These clinics are liberally patronized by the stockmen of the surrounding country, and the material thus secured affords practical work in surgery and the treatment of diseases. Many patients are kept in the hospital for treatment.

For descriptions of buildings and equipment, see page 60.

Zoology and Entomology

Associate Professor Chambliss.

The instruction in this division is largely conducted by the laboratory method with lectures and recitations, and is so given as to lead the student to observe and think for himself, as well as to secure a working knowledge of the science for practical purposes.

140. Physiology

SOPHOMORE CLASS; COURSES I., II.

An elementary course in which the physiology of digestion, circulation and excretion will receive special attention. The instruction will serve as a basis for hygiene and as an aid to those who may teach in public schools.

141. General Invertebrate Zoology

JUNIOR CLASS; COURSES I., II.

This course includes a general discussion of groups, and dissection of types, especially of the forms related to insects, and is further extended to lay a foundation for a knowledge of animal development. Animals of economic importance are given special attention.

Books of Reference: Invertebrate Morphology, by McMurrich; The Riverside Natural History; Text-book of Zoology, by Parker and Howell.

142. Economic Entomology

SENIOR CLASS; COURSES I., II.

By laboratory studies and field work, the students in this course will be made familiar with the most important injurious insects. For the systematic and biological work, a collection of one hundred species, with full notes on the habits of twenty-five, will be required. The practical work will consist of the preparation and application of insecticides.

Text-books: Manual for the Study of Insects, by Comstock; Elements of Insect Anatomy, by Comstock and Kellogg.

Books of Reference: Insects Injurious to Fruits, by Saunders; Economic Entomology, by Smith; Guide to Study of Insects, and a Text-book of Entomology, by Packard; U. S. Government Experiment Station and State publications on Entomology.

For description of equipment, see page 61.

Animal Husbandry and Dairying

Associate Professor John Michels.

Instructor Burgess.

150. Types of Cattle

FRESHMAN CLASS; COURSES I., II.

Market and breed types of dairy and beef cattle; their origin and history.

152. Types of Sheep and Hogs

SOPHOMORE CLASS; COURSE II.

Breed and market types of sheep and hogs; their origin and history.

153. Principles of Breeding

SOPHOMORE CLASS; COURSE II.

Principles of breeding, including selection; heredity; atavism; variation; fecundity; methods of breeding; in-an-in breeding; line-breeding, etc.

154. Stock Judging

SOPHOMORE CLASS; COURSE II.

Judging dairy and beef cattle, sheep and hogs, and score card practice.

155. Care and Management of Live Stock

JUNIOR CLASS; COURSE II.

Care and management, housing and feeding live stock.

156. Stock Feeding (short course)

SENIOR CLASS; COURSE I.

Stock feeding, including the consideration of the comparative food value and cost of all southern feeding stuffs; economic methods of feeding to produce milk, beef, etc.; and method of feeding work animals.

157, 158. Stock Feeding

SENIOR CLASS; COURSE II.

Stock feeding, including composition and digestibility of feeding stuffs; their preparation, use and cost; nutritive ratios; digestion, etc. The available feed stuffs of the south are discussed at length.

159. Group Judging

SENIOR CLASS; COURSE II.

Judging groups of animals similar to county and state fair work.

160. Pedigree Work and Compounding Rations

SENIOR CLASS; COURSE II.

161. Milk and Its Products

JUNIOR CLASS; COURSES I., II.

It is the object of this course to give the student a thorough knowledge of the sanitary conditions necessary to produce and handle milk; pasteurization; milk testing; dairy machinery; manufacture of butter, cheese and ice cream, and marketing.

162. Practical Work in Creamery

JUNIOR CLASS; COURSES I., II.

Cream separation and ripening; pasteurization of milk and cream; bottling milk; butter and cheese making; milk testing; butter and cheese scoring.

For description of buildings and equipment, see page 61.

Botany and Bacteriology

Associate Professor House.

171. General Botany

SOPHOMORE AND JUNIOR CLASSES; COURSE I.

The flowering plants are first studied and especial attention given to plant physiology; afterward a rapid survey of the whole plant kingdom is made by a study of types. Considerable attention is given to acquiring the ability to name plants, especially those of economic importance. While the work is necessarily very general, it serves to show the bearing of the results of modern botanical research on the problems underlying the cultivation of plants.

172. Elements of Forestry

SENIOR CLASS; COURSE I.

173. General Bacteriology

SENIOR CLASS; COURSES I., II.

The nature and distribution of bacteria, the facts underlying the phenomena of decay and disease, the hygiene of contagious diseases, the elaborate technique of practical work in the science, form the subject matter of the course.

174. Plant Pathology

SENIOR CLASS; COURSE I.

The course is devoted to the study of the diseases of economic plants. The class first studies pear blight as a typical disease, producing the disease by inoculation and watching its progress and effects. Other diseases induced by plant parasites are then studied from the systematic standpoint of the parasite. The students are taught to recognize the more common diseases, particularly in the early stages; and the whole question of prevention and practicable remedies is fully discussed.

175. Bacterial Diseases of Animals

SENIOR CLASS; COURSE II.

A study of animal diseases corresponding to No. 174 above, with the detailed study of anthrax as a type disease.

For description of equipment, see page 61.

Mechanical and Electrical Department

Professor Riggs, Director.

Electrical Engineering

Professor Riggs.

Assistant Professor Dargan.

200. Electricity and Magnetism

JUNIOR CLASS; COURSE IV.

Study of the principles of electricity and magnetism, and the elementary design of electro-magnetic mechanism. Wiring calculations, incandescent lighting, etc.

Text-books: Elementary Lessons in Electricity and Magnetism, by Thompson; Elementary Electricity and Magnetism, by Jackson.

201. Electrical Laboratory Practice

JUNIOR CLASS; COURSE IV.

Experimental verification of fundamental electrical laws; measurement of currents, electromotive force, resistance, permeability, capacity, etc.

Reference books: Ayrton's Practical Electricity; Nichol's Physics, Vol. I.; Stewart and Gee's Practical Physics; Henderson's Practical Electricity and Magnetism, Vols. I. and II.

202. Dynamo Electric Machinery

SENIOR CLASS; COURSE IV.

First half session: study and design of direct current dynamo-electric machinery. Second half session: study of alternating currents and their application to light and power. Special attention is directed to polyphase systems and apparatus.

Text-books: Thompson's Dynamo-Electric Machinery; Franklin's Alternating Currents and Alternating Current Machinery; Sheldon's Alternating Current Machines.

NOTE.—A complete dynamo design, with full set of drawings, is required as part of course 202 in Electrical Engineering, and course 238 in Mechanical Drawing.

203. Electrical Laboratory

SENIOR CLASS; COURSE IV.

Care, management and testing of arc and incandescent generators, direct current motors, etc. During third term management and test of single and polyphase machinery and apparatus.

For descriptions of buildings and equipment, see pages 62 and 63.

Mechanical Engineering

Associate Professor Earle.

Assistant Professor Howard.

In this course the student is taught the application of his scientific, mathematical and technical knowledge to the design and construction of engineering structures, and of machinery and manufacturing plants in general.

210. Mechanism

JUNIOR CLASS; COURSES III., IV., V., VI.

Spur, bevel, and screw gearing, belt gearing; lobed and elliptic wheels; epicyclic trains; escapements; ratchet motions; link motions; quick return motions; cam motions.

Text-book: Stahl and Wood's Mechanism.

211. Mechanics

JUNIOR CLASS; COURSES III., IV., V., VI.

Motion, force, velocity, force systems, moments of force, general principles, and methods of solving problems both analytically and graphically.

212. Mechanics

SENIOR CLASS; COURSES IV., V.

Two hours per week during the first two terms are given to the study of pure mechanics, centre of gravity, moments of inertia, work, energy, power, elasticity, resilience, strength of engineering materials, and hydraulics.

Text-book: Maurer's Technical Mechanics.

213. Mechanical Engineering

SENIOR CLASS; COURSES III., IV., V., VI.

Study of the design and construction of steam boilers, heaters, pumps and injectors; theory and design of simple, compound and triple expansion steam engines; gas and gasoline engines; hot air engines; air compressors and motors; ice and refrigerating machinery; heating and ventilating systems; transmission of power; engineering specifications and the law of contracts. Theory of the strength of engineering materials. Graphical solution of problems. Hydraulics.

Text-book: Ewing's Steam Engine and other Heat Engines.

214. Mechanical Laboratory

SENIOR CLASS; COURSES IV., V.

Study, use and calibration of water-meters, weirs, steam gages, indicators, dynamometers, calorimeters; efficiency tests of screw-jacks

and hoists; tests of fuel and lubricants; tests of building materials, as iron, wood, brick, cement, etc.; erecting, lining up and setting the valves of the plain slide-valve and automatic cut-off steam engines; indicator practice; horse-power and efficiency of steam, gasoline and hot-air engines and air-compressors and motors; efficiency trials of steam boilers; duty trial of steam pump and of College pumping engines.

Reference books: Carpenter's Experimental Engineering; Smart's Engineering Laboratory Practice; Thurston's Steam Engine.

215. Mechanical Laboratory

SENIOR CLASS; COURSES III., VI.

Study, use, and calibration of steam gages; indicators; calorimeters; tests of building materials, as iron, wood, brick, cement; erecting, lining up and setting the valves of plain slide-valve and automatic cut-off engines. Practice in running and testing water motors; steam engines; gasoline engines; pumps; firing and testing of steam boilers.

Reference books: Carpenter's Experimental Engineering; Smart's Engineering Laboratory Practice; Thurston's Steam Engine.

For descriptions of equipment, see page 64.

Physics

*Associate Professor Poats.**

*Associate Professor McClure.***

The study of physics is begun in the sophomore year by all regular students, and completed in that year by those students taking courses in agriculture and textile industry. All other regular students take physics, both theoretical and practical, in the junior year.

The instruction is by lectures and recitations, special stress being laid upon those principles and facts which are fundamental to the several engineering professions. The lectures and recitations are illustrated by numerous experiments before the class.

In the physical laboratory the student is taught to perform for himself all the experiments of a general laboratory course. The properties of matter, the laws of mechanics, heat, electricity, magnetism, light and sound are verified. Students are required to make accurate and neatly written reports of all experiments.

220. Elementary Physics

SOPHOMORE CLASS; ALL COURSES.

Properties of matter; physical measurements; mechanics of solids and fluids; electricity and magnetism.

Text-book: Carhart and Chute's Physics.

*Absent on leave during the session 1905-1906.

**In place of Professor Poats for session 1905-1906.

221. Electricity and Magnetism, Heat, Sound and Light

JUNIOR CLASS; COURSES III., IV., V.

Text-books: Carhart and Chute's Physics; Carhart's University Physics.

222. Physical Laboratory

JUNIOR CLASS; COURSES III., IV., V.

Experimental determination of the physical properties of matter and the verification of laws of mechanics; heat; sound; light; electricity and magnetism.

For description of equipment, see page 65.

Drawing and Designing

Associate Professor Lee.

Assistant Professor Klugh.

Instructor Timberlake.

Instructor Gardner.

Throughout the course the best methods of work pursued in the drafting rooms of workshops and manufacturing establishments are given.

230. Freehand Drawing

FRESHMAN CLASS; COURSES III., IV., V., VI.

Graded exercises in sketching from geometrical models, plaster casts, machine parts, and other objects in pencil and ink, particular attention being paid to outlines and perspective.

232. Mechanical Drawing

FRESHMAN CLASS; COURSES III., IV., V., VI.

Exercises in the use of drawing instruments; lettering; geometrical problems; projections; conventional section and shade lines; working drawings of simple parts of machines, from sketches and models.

233. Mechanical Drawing

FRESHMAN CLASS; COURSES I., II.

Exercises in the use of drawing instruments; lettering; geometrical problems; projections; plans and elevations of farm buildings.

234. Mechanical Drawing

SOPHOMORE CLASS; COURSES III., IV., VI.

Orthographic projection; intersection and development of surfaces; isometric drawing; perspective; shades and shadows; working drawings of machines or parts of machines from sketches and specifications. Elementary principles of machine design; construction of screw threads; proportioning of bolts and nuts.

434 a. Mechanical Drawing

SOPHOMORE CLASS; COURSE V.

Orthographic projection; intersection and development of surfaces; isometric drawing; perspective; shades and shadows; working drawings of machines or parts of machines from sketches and specifications; lettering; topographical drawing.

235. Mechanical Drawing

JUNIOR CLASS; COURSE IV.

Practical problems in mechanism. Lobed and elliptic wheels; spur and bevel gearing; cams; link motion; quick return motion; belt gearing; coupling; riveting, etc.; tinting, tracing and blue printing.

236. Mechanical Drawing

JUNIOR CLASS; COURSE V.

First half the same as course 235; platting; topographical drawing; tinting; railroad and map drawing; plans and details of buildings.

237. Mechanical Drawing

JUNIOR CLASS; COURSE III.

First half same as course 235. Second half, drawing of furnace designs and other metallurgical appliances.

238. Machine Design

SENIOR CLASS; COURSE IV.

Necessary drawings for work under construction in the shops; details of steam engine and electrical machinery. Design drawing required in graduation thesis.

239. Mechanical Drawing

SENIOR CLASS; COURSE V.

Railroad and map drawing; plans and details of bridges and buildings. Design drawing required in graduation thesis.

239 a. Mechanical Drawing

SENIOR CLASS; COURSE VI.

Cam drawing; jacquard tie-ups, etc. This work is done in the Textile School.

For description of equipment, see page 65.

Forge and Foundry

Assistant Professor Gantt.

Assistant Gardner.

240. Forge Work

FRESHMAN CLASS; ALL COURSES.

Study of Buffalo down draft forges; graduated exercises, embracing fundamental operations of forging, such as upsetting, bending, punching, twisting, welding, etc. Part of third term is devoted to working with tool steel, involving processes of annealing, hardening, tempering, etc.

241. Foundry Work

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Names and uses of molders tools; tempering and working of molding sand; making and patching of molds. Work with patterns of various shapes and sizes, illustrating the principles of venting, gating, coring, etc. Grading and mixing of iron; charging and operating cupola. Several weeks are devoted to work in brass molding. The practical instruction is supplemented by a course of lectures covering the various phases of foundry work.

242. Forge Work

FRESHMAN CLASS; COURSES I., II.

Study of Buffalo down draft forges. Short course, embracing fundamental operation of forging.

For description of equipment, see page 65.

Machine Shops

Assistant Professor Howard.

250. Machine Shop

JUNIOR CLASS; COURSES IV., V., VI.

Instruction begins at the bench with exercises in chipping, filing, scraping and polishing. Castings and drawings are given the student, and he is required to chip, file, scrape and polish each casting into the exact form and size represented by the corresponding drawing. From bench work the student is advanced to machine work, where he is taught turning, boring, polishing, drilling, threading, planing, milling, grinding, etc., in iron, brass and steel. In all cases the exercises are required to be worked to drawings. The graded course of exercises is designed to teach the fundamental principles and practices of machine metal-work from the simplest to the most difficult operations.

Only a few set exercises are given to teach important fundamental processes. It is the policy of the shop to keep several large machines in process of construction, requiring the students to do the work.

Experience has taught that students take greater interest in making parts of a machine that is for actual use than in mere routine exercise work.

251. Machine Shop

JUNIOR CLASS; COURSE IV.

The senior year is devoted to a more advanced work in the construction of engines, dynamos, motors and other machines. The student is encouraged to work from his own designs as far as possible, but is guided and directed by the instructor in charge.

For description of equipment, see page 66.

Woodwork

Assistant Professor Hook.

Assistant Gardner.

The course in woodwork does not aim to make the student a skilled workman, but rather to teach the proper use of tools and impress the importance of working to exact dimensions. At the same time, it gives a certain amount of manual dexterity, useful in every vocation.

The course covers two years, beginning with the most elementary principles and advancing gradually by a series of graded exercises to the more complicated instructions where special methods and tools are required. All work is done from working drawings, and commercial shop methods are constantly employed.

260. Woodwork

FRESHMAN CLASS; COURSES III., IV., V., VI.

Use and care of tools; graded exercises in carpentry, joining, wood-turning; construction of articles from working drawings; use of turning lathe and other simple machinery; construction of boxes, desks, etc., involving dove-tailing, gluing, polishing, etc. .

261. Woodwork

FRESHMAN CLASS; COURSES I., II.

This work is given for two terms only, and is the same as course 260, except that a study of farm structures, such as fences, gates, houses, etc., is substituted for a part of the work given in course 260.

262. Woodwork—Pattern Making

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Use of wood-working machinery, as planer, jointer, moulder, mortice and tenoning machine, carving and paneling machine, shaper, circular and jig-saws. Pattern work, with graded exercises, illustrating the principles of draft and shrinkage, and teaching the construction of core prints, core boxes, etc. Patterns for machines under construction. Cabinet work, and furniture construction, as chairs, desks, book-cases, hall stands, etc.

For description of equipment, see page 66.

Chemical Department

Professor Hardin, Director.

Chemistry and Metallurgy

Professor Hardin.

Associate Professor Brackett.

Assistant Professor Shiver.

Assistant Professor Henry.

300. General Chemistry

SOPHOMORE CLASS; ALL COURSES.

In organic chemistry and the leading facts and principles of organic chemistry. 1st term, non-metals; 2d term, metals; 3d term, organic chemistry.

Text-book: Roscoe's Elementary Chemistry.

301. Chemical Laboratory

SOPHOMORE CLASS; ALL COURSES.

Introductory work and qualitative analysis.

Text-book: Jones' Junior Course in Practical Chemistry.

302. Industrial Chemistry

JUNIOR CLASS; COURSES I., II., III.

The applications of chemistry in the more important arts and manufactures. Among the subjects studied are: Sulphuric acid; soda; chlorine; potash salts; fertilizers; lime, mortar, and cements; glass; porcelain; illuminating gas; coal tar; mineral oils; vegetable and animal oils; soap; fermentation industries, etc.

Text-book: Thorp's Outlines of Industrial Chemistry.

303. Chemical Laboratory

JUNIOR CLASS; COURSES I., II., III., VI.

Qualitative and quantitative analysis. A short course in assaying is given in the agricultural courses, and a fuller course in assaying in the metallurgical course.

Books used: Jones' Junior Course in Practical Chemistry; Fresenius' Qualitative and Quantitative Analysis; Notes on Assaying.

304. Agricultural Chemistry

SENIOR CLASS; COURSES I., II.

The composition of plants, the sources of plant food, the composition of soils, the improvement of soils by chemical means, the composition and manufacture of fertilizers, the composition of feeding-stuffs and of dairy products.

Text-books: Johnston's Elements of Agricultural Chemistry, edited by Cameron and Aikman.

305. Chemical Laboratory

SENIOR CLASS; COURSES I., II.

Quantitative analysis of fertilizers, soils, ashes of plants, water, cattle-foods and dairy products.

Books used: Bulletins of U. S. Department of Agriculture, containing methods of analysis adopted by the Association of Official Agricultural Chemists.

306. Physical Chemistry; History of Chemistry

SENIOR CLASS; COURSE III.

Text-books: VanDeventer's Physical Chemistry; Venable's History of Chemistry.

310. Metallurgy

SENIOR CLASS; COURSE III.

Text-book: Sexton's Elementary Text-book of Metallurgy.

311. Chemical and Metallurgical Laboratory

SENIOR CLASS; COURSE III.

For descriptions of buildings and equipment, see pages 56 and 67.

Department of Textile Industry

Professor Doggett, Director.

Details of Instruction

In carding and spinning, after the subject of raw material has been completed, machinery and processes used in the production of cotton yarns will be taken up systematically, going into a detailed examination and explanation of the separate machines and the mechanisms peculiar to them. Calculations for making changes of gears, speeds, production, etc., and practical operation of each machine will be required.

In designing, instruction begins with explanations of the principles of representing weaves on design paper, after which the designing of plain simple weaves, laying out of harness drafts, pegging plans, etc., are taken up, advancing into the designing of more complicated weaves usually made on harness. After the completion of harness weaves the time will be devoted to designing of Jacquard weaves and tying up of Jacquards. The aim of the instruction in designing will be to develop originality in the student.

The practical work in weaving is laid out to parallel the instruction in designing. The first part of the instruction in this work will be on hand looms. After the completion of that amount of work required on hand looms, the student is advanced to plain and fancy power looms, where in addition to the practical operation of weaving,

the loom will be analyzed and explained in detail, together with timing and setting all working parts. The latter part of this work will be on Jacquards.

Cloth analysis consists in dissecting samples of various kinds of cloth to ascertain the weave, texture, weight per yard, and the counts of yarn used in its construction. The students are required to reproduce some of these patterns on the looms in the school.

The work in textile chemistry and dyeing covers inorganic quantitative analysis; the general principles of organic chemistry, with special reference to the coloring matters; the preparation of mordants and dyes, and the application of them to the several textile fibres.

Mill construction, ventilation and fire protection will be discussed. Also the organization and relations of the various departments of an industrial establishment, the determination of costs of production and of the effect on costs of different systems of distributing indirect expenses. As occasion offers, addresses will be given by men of prominence who are interested in the cotton industry or in the manufacture of mill machinery.

Care is taken to develop accuracy in observation, neatness and clearness in written reports; and to this end each student is required to submit a comprehensive report—including the necessary notes and references from standard works on the subject—of every experiment performed by him. By this method each student is able to verify for himself in the laboratory, the truth of the principle stated to him in the class room.

Each student will be required to submit an organization and a list of the machinery equipment, for several different sizes of mills, making different classes of products.

In all the divisions of this department, the lecture work, so far as is necessary, will be illustrated with drawings and lantern slides.

Carding and Spinning

Assistant Professor Parker.

400. Raw Material

JUNIOR CLASS; COURSE VI.

That the manipulation of cotton fibres may be carried out successfully, under various conditions, it is essential that the characteristics peculiar to the cotton fibre should be understood. Therefore, the introductory work of the students of this department is to examine the physical properties of cotton fibres, to ascertain their lengths of staple, spinning qualities, color, harshness and softness, and to determine their suitability for making various kinds of yarns, filling, warp, ply yarns, etc. This study of fibres will not be limited to American cottons, but will include the more important commercial cottons of the world. The effects of temperature and humidity on fibres will be fully discussed. Also the handling of cotton prior to manufacturing processes, together with the injury to cotton fibres therefrom.

401. Opening and Mixing

JUNIOR CLASS; COURSE VI.

Beneficial effects of opening and airing cotton; length of time to air for best results; effects on resultant yarn if not properly opened; necessity of mixing; when to mix cottons and methods of carrying out same; effects of improper mixing; effects of a judicial mixing on the after processes of manufacture; reasons for blending; effects of blending cottons on the resultant yarn, for strength, appearance, cost, etc.; effects on finished products if cottons are not properly mixed or blended.

402. Picker Room

JUNIOR CLASS; COURSE VI.

Proper situation of picker room; arrangement of machinery in same; automatic feeder; purpose for which used; construction, adjustment of parts, etc.; action on cotton; manner of connecting them to breaker lappers with and without dust trunks; advantages of dust trunk; facilitating good results by proper care; breaker lapper, use, explanation of parts, beaters used, adjustment of working parts and experimenting with different speeds of beater; intermediate and finisher lappers, necessity of using same, construction, speeds, care of beaters, kinds of beaters, speeds of beater for different lengths of staple; evener motion and its control of feed rolls; adjustment of grids to regulate amount of waste, disposition of waste; regulation of air current; effects of air current on proper working of the lapper; lap formation; calculation on above machines for drafts, length of lap, etc.

403. Carding

JUNIOR CLASS; COURSE VI.

Purpose of carding; principle upon which cards are built; comparison of types of cards; explanation of purpose and construction of feed plate, licker-in, cylinder, flats, screens, doffer, coiler head, etc.; different settings of card to produce best results on different lengths and qualities of fibre; regulation of waste; amount of draft; grinding; effects of improper grinding on card clothing and fibre; calculations for changing gears and speeds of various working parts.

404. Railway Heads and Drawing Frames

JUNIOR CLASS; COURSE VI.

Purpose, use, construction, advantages and disadvantages of railway heads; explanation of stop motions, evener; principle of drawing slivers; purpose of drawing frame; comparing work of leather covered and metallic rolls; adjustment of rolls; distribution of draft between the rolls; speeds, stop motions; all calculations on above machines, drafts, production, etc.

405. Fly Frames

SENIOR CLASS; COURSE VI.

Slubber, intermediate, fine roving and jack frames; construction, care and operation of the modern fly frame; bobbin and flyer lead machines; advantages of the bobbin lead; detailed explanation of working parts, differential motion, horse head, builder, full bobbin stop motion, etc.; adjustment of drawing rolls; calculations for draft, twist, lay, tension and other gears.

406. Yarn Manipulation

SENIOR CLASS; COURSE VI.

In this branch of work is included twisting; reeling; bundling; spooling; beaming. The slasher, construction and use; necessity for sizing; creels, cylinders, size boxes, etc.; mixing of size; different sizing ingredients for special purposes; method of preparing warps for the slasher; various calculations regarding each of the above processes.

407. Combing

SENIOR CLASS; COURSE VI.

Sliver lap machine, its construction, use, etc.; care and operation; leather covered rolls; metallic rolls; ribbon lap machine, its construction, use, etc.; advantages of using same; care and operation; lap formation; combing machine, its use, care and operation; detailed explanation of working parts, cylinder, half laps, segments, detaching rolls, etc.; with rules for adjusting and timing same; regulation of waste made; necessity of the process; relation of the process to fine smooth yarns; practical experience in adjusting above machines; calculations for change gears, etc.

408. Spinning Frames

SENIOR CLASS; COURSE VI.

Construction of the modern ring spinning frames; purpose of ring spinning; discussion of its principal parts; rings and ring holders; various types of spindles in use; speed of spindles; weights, sizes and speeds of travellers; warp, filling and combination builder motions; speeds and settings of rolls for different lengths of staple; effects of twist on the strength, color and elasticity of yarns; calculations for draft, twist, production and various constants.

409. Spinning Mules

SENIOR CLASS; COURSE VI.

Construction and operation of the self-acting spinning mule; special features; description of the head stock; cam shaft, copping rail, nosing motion, easing motion, jacking motion, twisting at the head, etc.; different movements in the mule and timing of the same; forma-

tion of a cop; characteristics and uses of mule spun yarn; calculations for draft, twist, builder gear, etc.

Text and Reference Books: Nasmith's Student Cotton Spinner; Tompkins' Cotton Mill Processes and Calculations; Taggart's Cotton Spinning; Monie's Sizing and Sizing Compounds.

For description of equipment, see page 70.

Weaving and Designing

Assistant Professor McSwain.

410. Hand Loom Weaving

JUNIOR CLASS; COURSE VI.

The first practical work in weaving is on the hand loom. These hand looms have 4 x 4 box motion and 30 harness dobbies. After the design and necessary calculations have been made the student proceeds with dressing, drawing-in, reeding, tying the warp in loom, building harness chain and starting up loom; producing different weave effects from the same drawing-in draft by changing the harness chain; using box motions for color effects; combining two or more systems of filling with one system of warp, two or more systems of warp with one system of filling, two or more systems of warp with two or more systems of filling to produce figured fabrics of a special character; explanation of the different methods used in raising and lowering the harness.

411. Power Loom Weaving

JUNIOR AND SENIOR CLASSES; COURSE VI.

Power loom weaving will be taken up after the student has finished the required amount of hand loom work and will include a study of the plain or cam loom; cam motions used for raising and lowering the harness, such as the under cam, side cam, etc.; setting cams; sketching cams to produce a given motion; arrangement of strapping for two, three, four and five harness; timing cams to suit the number of harness used; speed of different width looms on the same class of fabrics; selection of temples and measurements for same; Draper loom; warp stop motion, filling change mechanism, etc.; the dobby analyzed and explained; methods of shedding; head motions; harness chains for single and double index dobbies; chains for head motions; explanation of box motions, four by one, four by four box, etc.; building box motion chains; explanation of multipliers used on box motions and harness motions; let-off motions, Morton, Bartlett, Shepard, and friction let-offs; open and closed shed machines explained; single and double index dobbies, etc.

412. Designing

JUNIOR AND SENIOR CLASSES; COURSE VI.

Purpose of designing, explanation of "warp" and "filling;" representing weaves on design paper; foundation weaves; plain or cotton

weave; weaves derived from plain weaves, such as rib and basket weaves; twill weaves and methods of construction; derivative weave from twills, such as broken, steep, skip, reclining and curved twills; corkscrew twills, entwining twills; satin weave and the purpose of same; weaves derived from satins, such as double satins and granites; shading of satins; figured effects produced by using warp and filling satins; color effects produced by using two or more colors in the above fabrics; methods of constructing granite weaves; points to be considered in combination weaves; special weaves; honey combs, gauze and imitation gauze, bedford cord, plain and fancy piques, matelasses, etc.; two systems of warp and one system of filling, or two systems of filling and one system of warp for the purpose of figuring; explanation of double cloth, purposes, and class of fabrics in which generally used; representing double cloth weave on design paper; use of different proportions of "back" and "face" for special effects; methods of stitching double cloth so that the stitching will produce a figuring effect; stitching so that it will not show either on "face" or "back" of cloth; leno weaves and method of representing on design paper; methods of making drawing-in drafts, plain and fancy drafts, point, skip, mixed or cross draws; chain drafts; rules for finding the number of heddles required for each harness; methods used in reducing weaves to the lowest number of harness.

313. Jacquard Designing

SENIOR CLASS; COURSE VI.

Explanation of the various Jacquard machines; methods of shedding, such as the rise and drop, single lift, double lift machine; single and double cylinder machine; open and closed shed machine; drawing of tie-ups, straight tie-up, both in French and English system, point tie-up, combination tie-up for special goods, as table damask, Marseilles quilts, etc.; practical operation of tying-up a Jacquard, cutting leashes, threading of comber board, tying on and leveling up mail eyes; figuring comber board for a given texture of goods; casting out hooks to reduce texture of goods without retying the harness, cutting and lacing cards for a given design; selection of design paper for different fabrics, with regard to picks and ends per inch used; methods used in laying out the figure for a Jacquard design; enlarging the sketch for design paper. Instruction will also be given in the principles of special weaves, such as swivel weaving, lappet weaving, chenille and pile fabrics as used for rugs, carpets, etc. The harmony and contrast of colors will also be discussed.

414. Cloth Analysis

SENIOR CLASS; COURSE VI.

Methods of arranging cloth sample for analysis; figuring the counts of cotton, woolen, worsted, and silk yarns; calculations for converting one system of yarn into that of another; finding the weight of cloth per yard and the counts of yarn used in its construction from the analysis; figuring width of warp in reed and number of reed to use to produce a given width and texture when woven; calculations to

determine the cost of producing a fabric having given values of material, labor, counts, picks and ends per inch, weight per yard, etc.

This work takes up all representative classes of weaves that can be woven on harness, and gives the student a thorough knowledge of figuring yarns, weight of cloth, ends and picks per inch, etc.

Reference books: Ivey's Loom Fixing; Fox's Mechanism of Weaving; Posselt's Technology of Textile Designs; Holmes' Cotton Cloth Designing.

For description of equipment, see page 70.

Textile Chemistry and Dyeing

Professor Doggett.

420. Textile Chemistry

JUNIOR CLASS; COURSE VI.

To the qualitative and quantitative analysis of the general course is added a course of lectures in inorganic chemistry especially relating to the materials used in the various textile processes of mordanting, fixing, scouring, bleaching, etc. Also lectures on organic chemistry, taking up as much of the aliphatic series as is necessary for an understanding of the chemical reactions involved in the application of these compounds to textile operations, and to prepare the student for the study of the aromatic compounds. Toward the end of the year the discussion of the simpler aromatic compounds is begun as an introduction to the special work on synthetic dyestuffs in the senior year.

The laboratory work will include the preparation of typical compounds of each class of derivatives taken up in the lectures.

421. Dyeing

SENIOR CLASS; COURSE VI.

A course of lectures is given which covers that portion of the aromatic series which has reference to the study of the principal synthetic dyestuffs. The laboratory work consists of the preparation of certain typical dyestuffs and the study of their reactions. A complete written report of each experiment is required of the student, and written reviews are given each month on the subjects covered in the lectures and laboratory work. The purpose of the course is to give the student an understanding of the chemistry of the operations by which coal tar products are separated, purified and converted into dyestuffs.

A course of lectures is also given on the application of the different classes of dyestuffs to the various fibres, together with the chemical and physical properties of the latter; bleaching and mercerizing of cotton yarns and cloth; scouring and bleaching of wool; the manufacture of artificial silk; calico printing, etc. In the laboratory the dyeing of cotton and wool is carried on in an experimental way, a study being made of typical dyestuffs of each of the principal classes. In the dye-house the dyeing of larger quantities of cotton

and wool is carried on, as well as the bleaching and mercerizing of cotton, scouring and bleaching of wool, and the printing of calico.

The student is required to make a written report of each experiment performed, accompanied by samples of the dyed material, which have been subjected to the action of various agencies, such as light, acids, alkalies, etc

The purpose of this training, taken in connection with the work preceding it, is to serve as an introduction to the work of the practical dyer, and to prepare the student for the position of chemist in textile establishments. The constant aim of the instruction is to point out the chemical reactions at the foundation of the above textile operations, so that the student going into practical work in the mills, will have at his command scientific knowledge sufficient to enable him to study intelligently such problems as may come before him in his line of work.

Reference books: Richter's Organic Chemistry; Bernthsen's Organic Chemistry; Holleman's Organic Chemistry; Allen's Commercial Organic Analysis; Heermann's Dyer's Materials; Schultz & Julius' Organic Coloring Matters; Georgievics' Chemical Technology of Textile Fibres; Georgievics' Chemistry of Dyestuffs; Kenecht, Rawson & Lowenthal's Manual of Dyeing; Beech's Dyeing of Cotton Fabrics; Hummel's Dyeing of Textile Fabrics; Frap's Principles of Dyeing.

For description of equipment, see page 71.

Academic Department

English

Professor Furman.

Assistant Professors McLucas, Daniel, Keitt, Bryan.

The purpose of the course in English is to enable the student to acquire the power to express his thoughts with clearness, precision and force; and to cultivate in him a taste for good literature. Elementary English grammar and the rudiments of composition are taught in the preparatory class.

500. English Grammar and Word Studies

PREPARATORY CLASS.

This class is carefully prepared for entry upon the work of this College, several of the professors in English having charge of its sections. The intention is to make the English course continuous, so that there may be no break between the preparatory and freshman work, either in teachers or text-books. The books used in Preparatory class are: Buehler's Grammar, Gilbert's Studies in Words, and such reading texts as may from time to time be selected by the instructors. Special attention is paid to spelling, definition of words, oral reading, and written exercises.

501. English Grammar, Reading and Composition

FRESHMAN CLASS; ALL COURSES.

A review of the subject of grammar introduces the work of this class. Constant drill is given in theme writing; pupils being expected to make use of the College library under direction of instructors. Methods of using dictionaries, encyclopedias, and other reference books, are explained practically to the students. Full supplementary readings are required, and practice is given in the writing of abstracts of books so read.

Text-books: Emerson-Lockwood's Lessons in English; Buehler's Practical Exercises in English; Webster's School Dictionary; and such English classics as may be assigned.

502. Rhetoric, Composition, American Literature

SOPHOMORE CLASS; ALL COURSES.

The study of rhetoric is pursued throughout the year. Constant theme writing is required. To supplement the work in composition, a brief course in American Literature is given, and parallel readings from American authors are assigned.

The text-books are Lewis's Second Manual of Composition, and Noble's Studies in American Literature. The parallel reading for 1905-6 consisted of Franklin's Autobiography, Irving's Alhambra, Cooper's Spy, Hayne's Speech (in the Hayne-Webster debate), Emer-

son's Nature, Lumell's My Garden Acquaintance, Hawthorne's Scarlet Letter, Selections from the poems of Bryant, Poe, Longfellow, Holmes, Whittier, Lowell, Lanier, and minor Southern poets.

503. English Literature

JUNIOR CLASS; ALL COURSES.

The work in the Junior class begins with the critical study of Macaulay as an essayist. This is followed by a general course in English literature. Pancost's English Literature is the text-book—this work being supplemented by lectures. Monthly essays are required, and frequent oral readings, embracing selections from the principal English authors from Chaucer to the present time.

504. Studies in Shakespeare

SENIOR CLASS; ALL COURSES.

This class is given instruction in the principles of literary criticism. A somewhat full course in Shakespeare study is furnished. Several plays are read in class—the students being orally examined on all questions, grammatical, historical, and ethical, which arise in the study of this author. Monthly essays are required.

History and Political Economy

Professor Morrison.

The course includes history of the United States, South Carolina history, general history, commercial geography, and political economy.

The method of instruction is a combination of the text-book and lecture methods, with parallel reading as far as practicable under the instructor's direction. The class-room is supplied with globes, charts, maps and works of reference, in the use of which the young men are carefully trained. The students make liberal use of the many volumes of poetry, historical romance, biography and history found in the College library.

The history of South Carolina and the history of the South receive special attention. "A people which takes no pride in the noble achievements of a remote ancestry will never achieve anything worthy to be remembered by remote descendants." Every effort is made to enable the young men to see and feel as their fathers and forefathers saw and felt.

510. United States History

PREPARATORY CLASS.

Text-book: A School History of the United States, by White.

511. South Carolina History

FRESHMAN CLASS; ALL COURSES.

Text-book: Weber's History of South Carolina.

512. Commercial Geography

FRESHMAN CLASS; ALL COURSES.

Text-book: Olin's Commercial Geography.

513. General History

SOPHOMORE CLASS; COURSES III., IV., V., VI.

JUNIOR CLASS; COURSES I. AND II.

Text-book: Anderson's New General History.

514. Civics

SOPHOMORE CLASS; COURSES III., IV., V., VI.

JUNIOR CLASS; COURSES I. AND II.

Text-book: Clark's Government.

515. Political Economy

SENIOR CLASS; ALL COURSES.

Text-book: Gide's Principles of Political Economy, second American edition (1904).

Mathematics

Professor Brodie.

Assistant Professors Martin, Houston, Shanklin, Hunter.

This course presupposes a thorough knowledge of arithmetic and algebra through elementary quadratics. (See requirements for admission, pages 24 and 25.)

520. Algebra

FRESHMAN CLASS; ALL COURSES.

Review of involution, evolution, theory of indices and quadratics; simple indeterminate equations; inequalities; proportion and variation; logarithms.

Text-book: Hall and Knight's Algebra for Colleges and Schools.

521. Geometry

FRESHMAN CLASS; ALL COURSES.

Rectilinear figures; circles; similar figures; comparison and measurement of surfaces of polygons; regular polygons and circles. Plane and solid angles; polyhedrons; cylinders and cones; spheres, spherical polygons and pyramids; volume. Special attention is given to the formation, on the part of students, of the habit of clear and accurate reasoning and concise expression.

Text-book: Wentworth's Geometry.

522. Trigonometry

SOPHOMORE CLASS; ALL COURSES.

Measurements of angles; trigonometric functions; right triangle; goniometry; relations between functions of one angle; functions of multiple angles; inverse functions; trigonometric equations; oblique triangles; De Moivre's theorem; spherical trigonometry; general formulas; right spherical triangle; oblique spherical triangle; applications.

Text-book: Phillips and Strong's Trigonometry.

523. Descriptive Geometry

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Study of the representation of points, lines, planes, surfaces and solids, and of their relations; tangencies, intersections and developments; shades, shadows and perspective; numerous original exercises.

Text-book: Low's Practical Solid or Descriptive Geometry.

524. Higher Algebra

SOPHOMORE CLASS; COURSES III., IV., V., VI.

Progressions; binominal theorem; theory of limits; convergency; divergency; and summation of series; undetermined coefficients; continued fractions; determinants; theory of equations.

Text-book: Hall and Knight's Algebra for Colleges and Schools.

515. Analytic Geometry

SOPHOMORE CLASS; COURSES III., IV., V., VI.

JUNIOR CLASS; COURSES IV., V., VI.

Cartesian and polar systems of co-ordinates; discussion and construction of loci; the straight line; transformation of co-ordinates; circle; parabola; ellipse; hyperbola; general equation of second degree involving two variables; higher plane curves; solid analytic geometry; systems of co-ordinates; equation of the plane; the straight line in space; surfaces of the second order.

Text-book: Tanner and Allen's Analytic Geometry.

526. Differential Calculus

JUNIOR CLASS; COURSES IV., V., VI.

Differentiation of algebraic functions; transcendental functions; successive differentiation and development of functions; functions of two variables; tangents and asymptotes; maxima and minima; radius of curvature; evolutes and involutes; envelopes.

Text-book: Snyder and Hutchison's Differential and Integral Calculus.

527. Integral Calculus

JUNIOR CLASS; COURSES IV., V., VI.

Elementary forms of integration; rational fractions; integration of irrational fractions; successive reduction; integration of functions of

two variables; lengths of curves; areas of plane curves; rectification of curves; cubature of volumes.

Text-book: Snyder and Hutchison's Differential and Integral Calculus.

Civil Engineering

(Included in the Department of Mathematics.)

530. Plane Surveying

SOPHOMORE CLASS; ALL COURSES.

This course includes the general principles and fundamental operations of surveying with compass, level, and transit. The field work includes actual surveys of tracts of land, of which the areas are computed and plats are drawn. Experience is given in problems of laying out and dividing up land, and in locating irregular boundaries. Practice is also had in section and differential leveling.

Text-book: Carhart's Plane Surveying.

531. Higher Surveying

JUNIOR CLASS; COURSE V.

Use and adjustment of transit, stadia, solar compass, and plane-table topographic surveying with transit and stadia; railroad topography; triangulation; city and hydraulic surveying; mine surveying; geodetic surveying; map and plan drawing; topographical symbols, etc.

Text-book: Johnson's Surveying.

532. Highway Engineering

JUNIOR CLASS; COURSE V.

Location, construction and maintenance of country roads and city streets; advantages of various materials for road covering; effects of grades and surface upon the cost of transportation; plans and specifications; practical problems in change of grade and relocation from surveys of existing roads.

Text-book: Spalding's Roads, Streets and Pavements.

533. Railway Engineering

JUNIOR CLASS; COURSE V.

Preliminary and location surveys; location from contour map; laying out of simple and compound curves; setting of slope stakes; computation of earthwork; switches; turnouts; theory of economic location; effects of grades, curves and length upon the cost of operation.

Text-book: Webb's Railway Construction.

534. Rural Engineering

JUNIOR CLASS; COURSES I., II.

This course is arranged with special view to the needs of the agricultural students. Among the subjects taught are: Farm surveying;

laying out and dividing up land; land drainage, including surface-drainage, under-drainage, and hill-side ditching and terracing. Road engineering, a practical course in road making and maintenance, with special reference to conditions in South Carolina. The principles underlying grade and surface resistance, drainage, surfacing, and the best methods of construction are carefully studied. The instruction in the class-room is supplemented by a liberal amount of field practice.

Text-books: Gillespie's Manual of Road-Making; Elliott's Farm Drainage.

535. Railway Engineering

SENIOR CLASS; COURSE V.

Surveys are made for a line of railway a mile or more in length; the necessary plans, profiles and cross-sections are prepared; grades are determined, curves laid out, slope stakes set, and all the needed measurements made to enable the student to complete the excavations and embankments, and to estimate the cost of construction.

Text-book: Webb's Railway Construction.

536. Structural Engineering

SENIOR CLASS; COURSE V.

Building materials; mechanics of construction; derivation of practical formulas; masonry; foundations on land and in water; stability of walls and arches; analytical and graphical investigation of stresses in plate girders, Howe, Pratt, Warren and other types of highway and railroad bridges, and various forms of roof trusses; bridge design.

Text-books: Wheeler's Civil Engineering; Merriman and Jacoby's Roofs and Bridges, Parts I. and III.

537. Hydraulic Engineering

SENIOR CLASS; COURSE V.

Hydrostatics; efflux; resistance and work of liquids; motion of water in pipes and open channels; derivation of practical formulas; hydrostatic and hydraulic machinery; determination of discharge of stream; head and available power; form and dimensions of pond or reservoir; detailed topography of dam site; determination of form and dimensions for stability of dams; preparation of plans and specifications; lectures on water-supply engineering.

Text-book: Merriman's Hydraulic Engineering.

For description of equipment, see page 72.

Military Department

*Captain Clay, U. S. Army, Retired, Director.
Commandant of Cadets.*

Military Science and Tactics

Captain Clay.

The course in military instruction, as prescribed and followed, is both theoretical and practical.

600. Tactics and Elements of Military Science

JUNIOR CLASS; ALL COURSES.

The theoretical instruction, given by recitations and lectures, includes the following, as prescribed by the War Department: The Infantry Drill Regulations, including the School of the Battalion in both close and extended order; the Manual of Guard Duty.

601. Military Science

SENIOR CLASS; ALL COURSES.

Small-arms Firing Regulations; the Articles of War, with special reference to articles 4, 8, 15, 20, 21, 22, 23, 24, 32, 38, 39, 40, 42, 44, 46, 47, 50, 55, 57, 61, and 65. Also the following records: Enlistment and discharge papers, including descriptive lists; morning reports; field and monthly returns; muster rolls; rosters; ration returns; requisitions; property returns.

In addition, ten lectures are given each year upon the following subjects: Two lectures on the organization of the United States Army; one lecture on patrols and outposts; one lecture on marches; one lecture on camps and camp hygiene; three lectures on lines and bases of operations; two lectures on the attack and defense of advance and rear guards, and outposts and convoys.

The articles of war specifically mentioned are among the most important for the young officer to know on first entering the service. The records for study should be thoroughly understood by all graduating cadets, because they show how the soldier enters and leaves the service; how he is accounted for, paid, fed, clothed, armed; and how his military duties are regulated.

602. Military Drill

REQUIRED OF ALL CADETS.

Drill regulations, including the school of the battalion through close and extended order; advance and rear guards and outposts; marches; the ceremonies of battalion review, inspection, parades, guard mounting, and escort of the colors; infantry target practice; instruction in first aid to the injured; guard duty.

In addition to the benefit which the general government derives from the military instruction given at this and other colleges, it is believed that the discipline enforced, the habits of obedience and punctuality inculcated, the improvement in bearing and appearance of those instructed, and also the practice in directing and commanding others, which nearly all in the course of time get, is of immense benefit to the students individually.

ORGANIZATION AND MODE OF
GOVERNMENT

GENERAL INFORMATION

Organization and Mode of Government

The following extracts from the book of "Regulations" explain the organization and mode of government of the corps:

Organization

"1. The President of the College shall have the general command and government of the institution, watching over its administration, discipline and instruction."

"2. The Commandant of Cadets, under the President of the College, has immediate command and control of the corps of cadets in all that pertains to its organization, drill, military police, discipline and administration. He is charged with the instruction of the cadets in the theoretical military course and in all practical military exercises. He will prescribe the order in which the furniture, bedding, books, clothing, equipments, etc., shall be arranged throughout the barracks, and shall, in person, make a minute and thorough inspection of the rooms, furniture, arms and accoutrements, etc., of the cadets at least once each week, and make a report thereon to the President."

"3. For instruction in tactics and for military police and discipline the corps of cadets will be organized into one or more battalions of two or more companies each, and a band when practicable. In case the number of the cadets will permit of the formation of two or more battalions, the organization will be regimental."

"4. The cadet officers and non-commissioned officers will be appointed by the Commandant of Cadets, subject to the approval of the President of the College. The selection for these positions will be made from those cadets who have been most studious and soldier-like in the performance of their duties and most exemplary in their general deportment. As a rule the cadet captains and lieutenants will be selected from the senior class; the non-commissioned staff and the sergeants from the junior class; and the corporals from the sophomore class."

"5. The field and staff shall consist of two cadet majors, two cadet lieutenants and adjutants, one cadet captain and

adjutant, one cadet captain and quartermaster. The non-commissioned staff shall consist of one regimental sergeant-major, one regimental quartermaster-sergeant, two battalion sergeant-majors, and one regimental color sergeant."

"6. In each company there shall be one captain, two lieutenants, one first sergeant, one company quartermaster-sergeant, and as many sergeants and corporals as may be required."

"7. Each of the battalions will be commanded, when on drill, and at such other times as the Commandant of Cadets shall direct, by its Cadet Major."

"8. On the graduation of every class the Commandant of Cadets shall obtain the names of such cadets as shall have shown special aptitude for military service, and furnish a list thereof to the Adjutant General of the State for his information. A copy of this list will also be sent to the Adjutant General of the United States Army, and the names of the three most distinguished students in military science and tactics, will, when graduated, be inserted in the United States Army Register."

Leave of Absence

Communications from parents, requesting leave of absence from the College for their sons, must be addressed directly to the President and not through the cadets.

The rules governing in cases of permits to visit home during the session of the College require that cadets who have accumulated more than eight demerits in any one term, and who have fallen below grade two in their studies on any report, will not be allowed to leave College during the term except in cases of extreme sickness or death in the family.

No leave of absence or honorary discharge will be granted after May 1st, except for serious causes.

Students who have been granted leaves of absence and who stay over the date allowed, unless for sickness or other good and valid reasons, will be required to pay again the incidental fee of \$5.00 before they will be permitted to continue their studies. In case of sickness, a certificate from the attending physician must be submitted to the President.

General Regulations

In addition to the special regulations of the military department, a copy of which is given each cadet, the following general regulations are enforced.

Cadets are subject to military discipline at all times, and are required to take part in drill, guard duty and other military exercises.

All undergraduate students are required to board in the barracks, except those who live with their parents or relatives near enough to attend from their homes.

Each student is required to purchase the prescribed uniform; also a pair of over-shoes and a water-proof coat. Students may provide themselves with such work-clothes as they desire.

Those occupying a room are consulted before another student is assigned to that room. A student not satisfied with his room-mate has the privilege of applying for permission to move to another room, and such applications are granted when practicable.

Cadets must at all times be respectful in their bearing to professors and other officers of the College.

The practice known as hazing is positively forbidden. All cadets, upon matriculation, shall be required to sign a pledge not to indulge in hazing or injuring in any form the person of any cadet or give countenance or encouragement thereto while a member of the corps of cadets. Any cadet indulging in this practice will be dismissed from the College.

Cadets are positively forbidden to use, or have in their possession, intoxicating liquors of any description.

Profanity and gambling are positively forbidden.

All combinations of cadets for the purpose of censuring one of their number are prohibited; also all combinations to defeat the purpose of any regulation of the College.

If any cadet shall consider himself wronged by another, or by an officer of the College, he has the right to complain thereof in writing to the President, who will examine into the complaint and take such measures for redressing the wrong as he may deem proper.

Cadets are forbidden to keep and fire-arms or other weapons in their possession not issued by the proper authority.

Any cadet receiving 66 demerits during a College term

shall be brought before the Discipline Committee and shall be dismissed or less severely punished.

Any cadet who leaves barracks without authority between retreat and reveille shall be dismissed.

The College rules require that all students be vaccinated, and parents are advised to have this done before sending their sons away from home.

Cadets who receive no demerits during any calendar month will be given a credit of eight to be applied in removing any demerits they may have had charged against them during any preceding months of that term.

Religious Exercises

Chapel Services.—There is preaching in Memorial Hall every Sunday morning by ministers of the different denominations, and chapel services are conducted every morning by the President and members of the Faculty. All students are required to attend these exercises unless specially excused.

Sunday School.—A Sunday School, at which attendance is voluntary, also meets every Sunday morning, and students are encouraged and urged to attend.

Young Men's Christian Association

Mr. Legate, a general Y. M. C. A. Secretary, is kept here by the organization and devotes his whole time to the work. This is a voluntary organization of the students. Any student who is a member of an evangelical church may become an active member. Any student of good moral character or who desires to improve his moral life may become an associate member. Any friend of the Association may become a sustaining member by paying \$5.00 or more annually.

The Association has a large, well-arranged hall on the third floor of the College building. Two regular meetings are held each week. The mid-week prayer service is conducted by the students. The meetings on Sunday evening are conducted by Faculty members, ministers and others. At this service, the entire student body, members of the Faculty and other friends are always welcome.

Possibly the largest work of the Association is its Bible

Study. This is the only systematic course of Bible instruction in the college. There were seventeen groups the past year. Each group is led by a student. The work is under the immediate supervision of the General Secretary of the Association. Every student, whether a member of the Association or not, should be a member of some group. Attendance at these classes is entirely voluntary. All students are urged to take one of the courses.

The following courses are offered:

Preparatory Course.—The Life and Works of Jesus, According to St. Mark.—By W. D. Murray.

An introductory course on the Life of Christ less difficult than those in the college cycle. For daily personal study.

Freshman Course.—Studies in the Life of Jesus Christ.—By Edward I. Bosworth.

These Bible studies recently issued, are arranged for practical daily use, and have already found much favor among college men.

Sophomore Course.—Studies in the Acts and Epistles — By Edward I. Bosworth.

Based on the "Records and Letters of the Apostolic Age," by Ernest De Witt Burton, and arranged for daily personal study.

Junior Course.—Studies in Old Testament Characters.—By Wilbert Webster White.

A revised edition of this standard book on Old Testament Characters, based on the same outline, but requiring less work of the student than the previous edition. Arranged for daily study.

Courses in Mission Study will also be offered.

Churches.—Episcopalian and Presbyterian churches are located near the College, and a number of students attend their Sunday Schools and preaching services.

Care of the Sick

The Surgeon is one of the regular officers of the College, and his special duty is to look after the health of the students. He also has charge of the hospital and supervises all matters pertaining to the sanitation of barracks.

At a regular appointed time every day, students who so desire may consult the Surgeon and those who are sick are

cared for by experienced nurses in the College hospital. In case of necessity, students are allowed to consult the Surgeon at any time, or send for him, as may be required.

Parents will be kept fully informed of the condition of sick students. The Surgeon, however, cannot undertake to notify parents every time a student reports to the hospital for medicine, or for rest on account of some slight complaint. Parents may always rest assured that they will be promptly notified of sickness of any consequence; and in case of serious illness the Surgeon will telegraph them.

Student Labor

The College assumes no obligation to furnish employment to students for wages. Considerable manual labor, however, is necessary to carry on the various departments of the College; and, when practicable, students are employed in this work, and are paid at the rate of eight cents an hour. The number applying for work always exceeds the number that can be employed, and those who enter College late in the session are at a special disadvantage in securing work.

No student is allowed to undertake work that interferes with his College course.

Literary Societies

Three literary societies, the Calhoun, the Columbian and the Palmetto, furnish a valuable supplement to the work of the College. These societies afford facilities for practice in debate, oratory, declamation and essay-writing, and their members acquire valuable knowledge of parliamentary law and usage. The meetings are held weekly on Saturday evenings. An annual contest is also held by each society, at which there are debates, orations and declamations by the students.

On these occasions a representative is chosen from each society to enter the contest for the Trustees Medal at commencement. The societies themselves also award medals annually to the best debater, orator, and declaimer.

The societies occupy halls in the main College building, which are furnished with carpets and opera-chairs, and are maintained entirely by the students. A small fee is charged for initiation, and there are also monthly dues of a few

cents to meet running expenses. All students are advised to join one of these societies.

State Oratorical Contest

The literary societies also send a representative to the annual contests of the South Carolina Intercollegiate Oratorical Association, which includes the following institutions: Furman University, Wofford College, Clemson Agricultural College, Presbyterian College of South Carolina, Erskine College, Newberry College, South Carolina Military Academy, and South Carolina College.

Publications by the Students

The Clemson College Chronicle, a monthly magazine designed to encourage literary work among the students, is published jointly by the literary societies during the College session.

An annual, illustrated volume, is published under the auspices of the senior class.

Science Club

The Clemson College Science Club was organized for the purpose of promoting knowledge of the progress of the natural sciences, theoretical and applied. Public meetings are held every month, at which subjects of general scientific interest are discussed by members of the Faculty and advanced students of the College.

Lecture Course

A lecture course, employing some of the best talent on the American platform, is provided every session. These lectures are delivered in Memorial Hall, at a cost to students of \$1.00 for the course. During the session of 1905-1906 the following lectures and concerts were given:

- I. Miss Duthie and Miss Daniel.....Oct. 13
Scotch and Irish Songs.
- II. Schubert String Quartette.....Nov. 24
- III. Dr. Geo. E. Vincent.....Dec. 8
"The Mind of the Mob."
- IV. Katharine Ridgeway Concert Company.....Jan. 12

V. David DeArmond.....	Feb. 9
"Victory and Defeat."	
VI. Temple Quartette.....	Feb. 28
VII. Maro the Magician.....	Mar. 10
VIII. Miss Mamie Harrison.....	Mar. 30
IX. Dr. J. H. Penniman.....	Mar. 23
X. Prof. J. W. Thomson.....	Apr. 21

The State Summer School for Teachers

The State Summer School for Teachers was held at the College from June 21st to July 19th. A total of 692 students was enrolled during the session. This school was presided over by the State Superintendent of Education, Hon. O. B. Martin, who was assisted by an able Faculty, selected from the schools and colleges of South Carolina and other States.

Cadet Exchange

A Cadet Exchange is maintained, where students may purchase at wholesale prices necessary articles, such as books, stationery, collars, cuffs, underwear, etc.

College Athletics

It is the policy of the College to sanction and encourage athletics so long as they do not interfere with studies and other duties. Football and baseball are the most popular games, and it is assumed that parents are willing for their sons to participate in these games unless the President is definitely notified to the contrary. The athletic teams are permitted to take a few trips each season, usually on Saturdays, to play intercollegiate games. Students must file written permission from parents for these trips.

Athletic Council.—The Southern Intercollegiate Athletic Association, of which the College is a member, has placed the athletic interests of each college under the supervision of an Athletic Council, consisting of members of the Faculty and of the student body. This council consists of nine members—two members of the Faculty selected by the students for president and secretary-treasurer, respectively, three members of the Faculty chosen by the Faculty, and four students.

Intercollegiate Athletics.—For the regulation of intercollegiate athletics, the Faculty has adopted the following rules:

1. Any student who fails on more than two subjects during a collegiate month shall not be allowed to participate in match games during the ensuing month. If, by reason of absence or other cause, a grade on the month's work is lacking, the instructor shall give a temporary grade based upon the work done, and this temporary grade shall be used in determining the student's athletic standing until the regular grade is available.

2. No student who is found to be deficient in more than one subject for a term shall be allowed to play in any match game during the next college year. Change from one course to another, or from a regular to an irregular or special course, shall not interfere with the operation of this rule.

3. No graduate student shall participate in any match game unless he is taking at least twenty hours per week of graduate work; that is, work of a higher grade than is given in the regular college courses. Such student shall also conform to the rules of class standing as set forth in sections 1 and 2. Further, no graduate student of more than one year's standing shall participate in any match game.

4. No irregular or special student shall be allowed to represent the College in any match game unless taking at least twenty-four hours' work per week, of which not less than twelve hours shall be "theoretical" work.

5. No football player who leaves College before the end of the first term, except for reasons satisfactory to the Faculty Athletic Committee, shall be allowed to participate in match games during the next three college terms.

6. It shall be the duty of the Faculty Athletic Committee to see that the foregoing rules and regulations are strictly enforced.

7. No team shall be allowed to leave the college grounds to participate in any match games unless accompanied by a member of the Faculty, who shall be responsible to the Faculty for the conduct of the players and coaches while away from the College. Such representative shall be appointed by the Chairman of the Faculty Athletic Committee, and his expenses shall be included in the expenses of the trip.

Field Day.—May 1st is observed as a holiday for contests in track and field athletics, such as running, hurdling, high and broad jumping, pole-vaulting, hammer-throwing, putting the shot, etc., and is known as "Field Day."

Donations

Textile Department.

The A. T. Atherton Machine Co., Pawtucket, R. I.—One automatic feeder; one finisher lapper; one lot lap rods; half value on breaker lapper.

Saco & Pettee Machine Co., Newton Upper Falls, Mass —

One 40-in. revolving top flat card; one Entwistle traverse grinder; one Entwistle drum grinder; one burnisher; one set carder's tools; one improved railway head, with back, front and full can stop motion; one 4 delivery draw frame, with back, front and full can stop motion, fitted with single preventer rolls; one 40 spindle slubber; one 60 spindle intermediate roving frame; one 80 spindle fine roving frame; one 128 spindle combination warp and filling ring spinning frame; one 72 spindle improved spooler. A sufficient number of gears were sent with these machines to make various changes that may be necessary.

Mason Machine Works, Taunton, Mass.—One 40-in. revolving top flat card; one Entwistle drum grinder; one stripper brush; one set carders' tools; one railway head, with back, front and full can stop motion; one 4 delivery draw frame, with back, front and full can stop motion, fitted with single preventer roll; one 112 spindle combination warp and filling ring spinning frame; one 40-in. plain loom; one 36-in. fancy cotton loom; one 36-in. 24 harness dobby loom; half value on combing machinery. All necessary gears with these machines to make the required changes.

The D. A. Tompkins Co., Charlotte, N. C.—One adjustable reel; one draw-in frame; one loom box; one doffer box; two section beams; one switch board, complete; one emery wheel and stand; one band machine; one saw tooth model gin; one spike tooth model gin.

Draper Co., Hopedale, Mass.—One 40-in. Northrop loom; one 28-in. Northrop loom; one 48 spindle combination wet and dry twister; one 40 spindle spooler; one section warper; one ball warper; one Rhodes' banding machine, with Watt's patent marking device; section beams; temples as required; loom findings.

Crompton & Knowles Loom Works, Providence, R. I.—Half value on following: One 32-in. loom, with 416 hook Jacquard; one 32-in. loom, with leno attachment; one 65-in. 4x1 box loom, with 624 hook Jacquard; one 36-in. Knowles "Gem" loom; one 36-in. fancy cotton towel loom; one 30-in. Knowles fancy cotton loom, with 16 harness dobby; two 16 harness dobbies.

Universal Winding Co., Boston, Mass.—One 6 spindle cone and tube winder.

Woonsocket Machine and Press Co., Woonsocket, R. I.—Half value on one 96 spindle jack roving frame.

T. C. Entwistle, Lowell, Mass.—Half value on one beaming frame.

Fales & Jenks Machine Co., Pawtucket, R. I.—Two combination warp and filling spinning frames, 80 spindles each; one wet twister, combined filling and taper top wind, 70 spindles; half value on twister like above, all necessary gears, etc.

T. B. Wood's Sons, Chambersburg, Pa.—One-fourth value on equipment of shafting, hangers and pulleys used in new extension of building.

Jones & Laughlin Co., Limited, Pittsburg, Pa.—The entire original equipment of shafting, hangers and pulleys.

Whitin Machine Works, Whitinsville, Mass.—Half value on following: One 40-in. cam loom; one 40-in. loom, with 20 harness dobby; one 30-in. duck loom; two combination warp and filling ring spinning frames, 80 spindles each; all gears, etc.

Schaum & Uhlinger, Philadelphia, Pa.—One top engine drive, self-balancing, hydro-extractor.

The Metallic Drawing Roll Co., Indian Orchard, Mass.—Metallic drawing rolls for railway heads and draw frames as required.

Westinghouse Electric Co., East Pittsburg, Pa.—One 22 K. W., 220 volt direct current motor.

The American Moistening Co., Boston, Mass.—Complete system of "Vortex" humidifiers, including pump, tank and connections.

Beattie Machine Works, Cohoes, N. Y.—One single elastic stitch looper.

E. Jenckes Manufacturing Co., Pawtucket, R. I.—One "Invincible" seamless hosiery knitting machine.

W. W. Altemus & Son, Philadelphia, Pa.—One bobbin winder.

New Bedford Paper Co., New Bedford, Mass.—Cops, cones, tubes, etc., as required.

Charlotte Supply Co., Charlotte, N. C.—All belting as required.

American Supply Co., Providence, R. I.—Heddles, heddle frames, reeds and loom supplies as required.

Loom Picker Co., Biddeford, Me.—Loom supplies.

The Emmons Loom Harness Co.—Cotton harness, reeds and loom supplies.

Roney & Rae Co., Woonsocket, R. I.—Twelve bobbin holders.

Steel Heddle Manufacturing Co., Philadelphia, Pa.—2,500 patented flat steel heddles.

R. A. Blythe, Philadelphia, Pa.—One lot mercerized yarns.

Barber & Coleman, Boston, Mass.—One Barber knotter.

National Ring Traveller Co., Providence, R. I.—One lot of spinning and twister travellers.

DeHaven Manufacturing Co., Brooklyn, N. Y.—One lot of spinning and twister travellers.

Victor Shaw Ring Traveller Co., Providence, R. I.—One lot spinning travellers.

Morley Button Manufacturing Co., Boston, Mass.—One lot spinning travellers.

Sykes & Street, New York, N. Y.—Collection of dye stuffs.

New York and Boston Dyewood Co., New York, N. Y.—Collection of dye stuffs.

Victor G. Bloede & Co., Baltimore, Md.—Collection of dye stuffs and mordants.

Cassella Color Co., New York, N. Y.—Large collection of dye stuffs.

Kuttruff, Pickardt & Co., New York, N. Y.—Collection of dye stuffs.

Farbenfabriken, of Elberfeld Co., New York, N. Y.—Large collection of dye stuffs, over 300 samples.

H. A. Metz & Co., New York, N. Y.—Large collection of dye stuffs.

Grasselli Chemical Co., New York, N. Y.—Chemicals used in dyeing.

Schoellkopf, Hartford & Hanna & Co., Buffalo, N. Y.—Large collection of dye stuffs.

Roessler & Hasslacher Chemical Co., New York, N. Y.—Sodium peroxide for bleaching demonstrations.

Berlin Aniline Works, New York, N. Y.—Collection of dye stuffs.

Chas. J. Fox, Philadelphia, Pa.—50 lbs. textile soaps.

Kalle & Co., New York, N. Y.—Collection of dye stuffs.

A. Klipstein & Co., New York, N. Y.—Collection of dye stuffs.

Woonsocket Reed and Shuttle Works, four self-threading shuttles.

Southern Railway Co.—Half freight rates, over their lines, on entire original equipment of machinery.

Donations to the Library.

Donations to the Library

Since the publication of the last catalogue, the library has received gifts from the following:

S. W. Reaves (1 vol. and "The Outlook" for 3 years); C. S. Bradford (9 vols.; "The Southern Literary Messenger," 7 Nos.; "American Scenery," Parts, 2, 3, 4, 5 and 6); Dr. P. H. E. Sloan (22 vols.); S. L. Phillips (1 vol.); Miss Louie Simpson (1 vol.); Mrs. H. W. Mills and Miss Emily H. Smith (2 vols. and "The Southern Review," 3 Nos.; "The Southern Quarterly Review," 15 Nos.); J. Volney Lewis (1 vol.); O. M. Pegues (1 vol.); Col. Benjamin Sloan (1 vol.); Prof. H. I. House (1 vol.); subscriptions to the following: "The Prairie Farmer," "The Practical Farmer," "The Progressive Farmer," "The Southern Farmer," "The Southern Farm Gazette," "The National Farmer and Stock Grower," "The American Agriculturist," "The Breeder's Gazette," "Southern Mills," "Four Trade News," "The Greenville Daily News," "The Spartanburg Herald," "The Herald and News," "The Patriot," "The Manning Times," "The Athens Banner," "The Abbeville Press and Banner," "The Times and Democrat," "The Clinton Chronicle," "Advocate of Peace," "The Baptist Courier," "The Baptist Press," "The Farm and Floral World," "Wool and Cotton Reporter," "Our Monthly."

NOTE.—A special book is kept in which the record of every donation is preserved, and a special label, stating the name of the donor, is placed in each volume presented.

Donations to the Museum

The Museum during the past year has received the following:

A silver sewing bird formerly owned by Mrs. John C.

Calhoun, and afterwards by her daughter, Mrs. Clemson, has been contributed by Mr. J. C. Stribling, of Pendleton, S. C.

The pen used by the original seven Life Trustees in accepting the Clemson bequest has also been presented by Mr. J. C. Stribling.

From H. C. Markley, Greenville, S. C., a flint-lock musket, an old iron cotton tester, one pike.

From Dr. P. H. Mell, one of the first cameras manufactured in this country, specimens of old Egyptian cloth.

From H. H. Smith, of the New York World, bark of the lace paper tree from the Barbadoes, cocoa pod from Trinidad, melted links of iron chain from St. Pierre, Trinidad nutmegs.

From Prof. T. S. Keitt, copper ore from North Carolina, rattlesnake skin from North Carolina.

From the State Geologist, collection of minerals and rocks from South Carolina.

From Oren B. Brodie, minerals and specimens of Indian arrow-heads and pottery.

From Miss Trescott, a set of custard cups.

From F. H. H. Calhoun, minerals and rocks from Colorado, Utah, New Mexico, Arizona, Montana and Illinois.

Donations to the Textile Museum

One reel, made by John Verner, a Revolutionary soldier; loaned by Miss Mary R. Shelor, Westminster, S. C.

One hand loom, loaned by Dr. W. B. Noffz, Cross Hill, S. C.

Samples ticking, from the Lexington Mfg. Co., Lexington, S. C.

One copy of "The Cotton Gin. The History of Its Invention," by D. A. Tompkins. Presented by the author

700 mounted cloth samples, from Marshall Field & Co., Chicago, Ill. Complete set of samples of cloth in demand in the Chinese market, showing defects of American goods, from U. S. Department of Commerce and Labor.

Experiment Station and Inspection Work

Clemson College is not only engaged in providing courses of instruction for the youths of the State, but under the laws of South Carolina it is conducting work of great importance to the farmers, fruit growers, and people engaged in animal industry. There are four departments of experimentation and inspection inaugurated by the Board of Trustees:

1. Experiments in Agriculture (State Experiment Station).
2. Inspection of Fertilizers.
3. Veterinary Inspection.
4. Entomological Inspection.

The Experimental Station is devoted to experiments in subjects relating to the chemical composition of plants and soils; rotation experiments; plant breeding; study of forage plants for hay and pasturage; plant diseases; diseases of animals, such as tuberculosis, Texas fever, glanders; feeding of pigs; general dairy experiments; insects injurious and beneficial to plants; studies of varieties of fruits; methods of pruning grape vines, etc.

Bulletins giving the results of these experiments are published at intervals during the year, and are mailed free to every one who applies for them.

Although the Station was established for the benefit of the farmers, students of the College profit by the experiments, in connection with the regular courses of study.

The second division, viz: the inspection of fertilizers, is conducted by the Board of Trustees for the protection of the farmers in the State against the introduction of fraudulent brands of fertilizers. The inspectors are appointed by the Board of Trustees, and the entire work of issuing tags, the analysis of samples and the enforcement of the law, is in the hands of the Board of Trustees of Clemson College. After paying the expenses required for conducting this inspection, all the surplus money is turned over to the College for running expenses and equipment.

On the 19th of February, 1901, the General Assembly passed an Act empowering the Board of Trustees of Clemson College to promulgate and enforce rules and regulations for the guidance of the Veterinarian of the College in the treatment or destruction of animals affected with contagious diseases, and to prescribe the powers of the Veterinarian whenever such diseases appear in any part of the State. In view of the frequent appearance of glanders and other contagious diseases in the State, this law will prove of great benefit to the stock-raising industry.

The Entomologist is required by the State law to inspect all nursery stock coming into the State and to prevent the ravages of insects as far as possible.

On the 19th of February, 1901, the General Assembly passed an Act requiring the Board of Trustees of Clemson College to designate three of their number, to be known as the State Board of Entomology. To the said Board was given all power to adopt rules and regulations governing the inspections relative to the sale and transportation of

trees, plants, shrubs, cuttings, buds, vines, bulbs, or roots that they may deem advisable in order to prevent or remove or destroy any insect pests or plant diseases in the State. The Board was also given power to appoint an Entomologist, who should be as skilled Horticulturist, and Assistant Entomologist, if, in their judgment, it would be impossible for the Entomologist to discharge the duties hereby devolved upon him. Such an Entomologist was also given the powers of an inspector, with authority to visit in sections of the State where insects injurious to plants are believed to exist, and to determine whether such plants should or should not be destroyed.

Popular Science Bulletins

In addition to the Experiment Station bulletins setting forth the results of experiments and other investigations in the interest of agricultural industries, the College has inaugurated a series of bulletins on a variety of scientific subjects of interest to the people at large, and written, as far as practicable, in non-technical language. A number of these are now in preparation, including the subjects of road construction and maintenance, protection against lightning, etc. They will be mailed, like the Experiment Station bulletins, free of charge to those who apply for them.

Analyses, Information, Etc.

The various departments of the College and Experiment Station will furnish, free of charge, advice and information on any topic pertaining to general agriculture, horticulture, botany, entomology, veterinary science, dairying, stock breeding, etc.; also, analyses of fertilizers, marls, waters and other substances, assays of ores, determination of rocks and minerals, tests of bricks, cements, building stones, illuminating oils, calibration of electrical instruments, etc.

The departments cannot undertake to analyze stomachs or other parts of poisoned animals, or to make tests for poisons.

All inquiries and requests should be addressed to the President, giving explicit account of conditions, difficulties, etc., as far as possible, and the matter will be referred promptly to the proper department for further correspondence.

Before sending samples of any kind for examination or analysis, it is best to write for instructions, and thus avoid trouble and delay.

Analyses for State Geologist

In addition to the work referred to above, analyses are made for the State Geologist of the various materials collected by him. These analyses are made as provided for in paragraph 14, section 1, Act of the General Assembly No. 605, approved February 22, 1902.

Farmers' Institutes

During the year farmers' institutes are held, under the management of the College, in many counties of the State. The President and professors of agriculture, chemistry, horticulture, dairying, veterinary science, botany, and other members of the Faculty, take part in these

institutes. The effort is made to bring practical information to the farmer, and to give him the results of scientific investigation in the interest of agriculture. The success thus far attained is most encouraging, and these institutions have become a permanent feature in the work of the College.

Farmers wishing an institute held in their county or community should write to the President.

The State Farmers' Institute, of four days' duration, is held annually at the College during the month of August. Besides the College Faculty, a number of prominent speakers from this and other States attend this institute and participate in the lectures and discussions.

During the fall and winter months, the College had the use of a vestibule car loaned it by the Southern Railway. This car was transported free of cost to thirty-two different towns along the Southern and Atlantic Coast Line railways. A number of lecturers from the College, and experts in various lines from outside the State, accompanied the car to give lectures on subjects relating to agriculture.

This car was used as an exhibit car, illustrating the work done at Clemson by students in the various departments. It contained dairy apparatus, material to show best the methods of pruning grapes, fruit trees, methods of building, etc. Forty-five varieties of cowpeas, twenty varieties of corn, thirty varieties of wheat, samples of fertilizer constituents, geological specimens of valuable minerals found in the State, were also to be seen in this car. The car was also fitted with a magic lantern to give illustrated lectures on various subjects.

The Southern Railway has kindly granted the College the use of the car again this summer.

Thomas G. Clemson's Will

The following paragraphs are extracts from Mr. Clemson's will relating to the establishment of the College:

Whereas, I, Thomas G. Clemson, of the County and State aforesaid, did on the 14th of August, 1883, execute my last will and testament, wherein I sought to provide for the establishment of a scientific institution upon the Fort Hill place, and therein provided what sciences should be taught in said institution; and whereas, I am now satisfied that my intention and purpose therein may be misunderstood as intending that no other studies or sciences should be taught in said institution than those mentioned in said will, which was not my purpose or intention: Now, desiring to make my purpose plain, as well as to make some other changes in the disposition of my property than made in said will, I do now make, publish and declare this instrument as and for my last will and testament, hereby revoking all previous wills and codicils by me made, especially the will above referred to, dated August 14th, 1883. Feeling a great sympathy for the farmers of this State, and the difficulties with which they have to contend in their efforts to establish the business of agriculture upon a proper basis, and believing there can be no permanent improvement in agriculture without a knowledge of those sciences which pertain particularly thereto, I have determined to devote the bulk of my property

to the establishment of an Agricultural College upon the Fort Hill place. My purpose is to establish an Agricultural College which will afford useful information to the farmers and mechanics; therefore it should afford thorough instruction in agriculture and the natural sciences connected therewith; it should combine, if practicable, physical with intellectual education, and should be a high seminary of learning in which the graduate of the common schools can commence, pursue and finish a course of studies terminating in thorough theoretic and practical instruction in those sciences and arts which bear directly upon agriculture. But I decide to state plainly, that I wish the Trustees of said institution to have full authority and power to regulate all matters pertaining to said institution, to fix the course of studies, to make rules for the government of the same, and to change them, as in their judgment experience may prove necessary; but to always bear in mind that the benefits herein sought to be bestowed are intended to benefit agricultural and mechanical industries. I trust I do not exaggerate the importance of such an institution for developing the material resources of the State, by affording its youth the advantage of scientific culture, and that I do not over-rate the intelligence of the Legislature of South Carolina, ever distinguished for liberality, in assuming that such appropriations will be made as will be necessary to supplement the fund resulting from the bequest herein made.

ITEM 1.—I therefore give and devise to my executor hereinafter named, the aforesaid Fort Hill place, where I now reside, formerly the house of my father-in-law, John C. Calhoun, consisting of eight hundred and fourteen acres, more or less, in trust that whenever the State of South Carolina may accept said property as a donation from me, for the purpose of thereupon founding an Agricultural College, in accordance with the views I have hereinbefore expressed (of which the Chief Justice of South Carolina shall be the Judge), then my executor shall execute a deed of the said property to the said State and turn over to the same all property hereinafter given as an endowment of said institution, to be held as such by the said State so long as it in good faith devotes said property to the purpose of the donation: *Provided, however,* That this acceptance by the State shall be signified, and a practical carrying out be commenced, within three years from the date of the probate of this my will. During this term of three years, or as much thereof as may elapse before the acceptance or refusal of this donation, my executor shall invest the net produce of the land and other property, such invested fund awaiting the action of the Legislature, and to form a part of the endowment of said institution, if accepted, or to form a part of the endowment of the college or school hereinafter provided for, should the donation not be accepted by the State.

ITEM 2.—The following named gentlemen, seven in number, shall be seven of the Board of Trustees, to wit: R. W. Simpson, D. K. Norris, M. L. Donaldson, R. E. Bowen, B. R. Tillman, J. E. Wanamaker, and J. E. Bradley; and the State if it accepts the donation shall never increase the Board of Trustees to a number greater than thirteen in all, nor shall the duties of said Board be taken away or conferred upon any other men or body of men. The seven Trustees

appointed by me shall always have the right, and the power is hereby given them and their successors, which right the Legislature shall never take away or abridge, to fill all vacancies which may occur in their number by death, resignation, refusal to act, or otherwise. But the Legislature may provide as it sees proper for the appointment or election of the other six Trustees, if it accepts the donation. And I do hereby request the seven Trustees above named, or such of them as may be living, or may be willing to act, to meet as soon after my death as practicable, and organize and at once fill all vacancies that may have occurred, and exert themselves to effectuate my purposes as herein set forth. And I hereby instruct my executor to notify them of their appointment herein, as soon as practicable. The name of this institution is to be "The Clemson Agricultural College of South Carolina."

ITEM 4.—It is my desire that the dwelling house on Fort Hill shall never be torn down or altered, but shall be kept in repair, with all the articles of furniture and vertu, which I hereinafter give for that purpose, and shall always be open for the inspection of visitors; but a part of the house may be used by such of the Professors as the Trustees may direct.

Laws of Congress Relating to the College

AN ACT donating public lands to the several States and Territories which may provide Colleges for the benefit of agriculture and the mechanic arts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be granted to the several States, for the purpose hereinafter mentioned, an amount of public land, to be apportioned to each State a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty: *Provided,* That no mineral lands shall be selected or purchased under the provisions of this Act.

SEC. 2. *And be it further enacted,* That the lands aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections not less than one-quarter of section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands within the limits of such State; and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public land subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this Act, land script to the amount of acres for the deficiency of its distributive share; and script to be sold by said State, and the proceeds thereof applied to the uses and purposes prescribed in this Act, and for no other use or purpose whatever: *Provided,* That in no case shall any State to which land script may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said land script upon any of the unappro-

priated lands of the United States subject to sale at private entry, at one dollar and twenty-five cents or less per acre; *and provided further*, That not more than one million acres shall be located by such assignees in any one of the States; *and provided further*, That no such location shall be made before one year from the passage of this Act.

SEC. 3. *And be it further enacted*, That all the expenses of management, superintendence and taxes, from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the money which may be received therefrom, shall be paid by the States to which they may belong, out of the treasury of said States, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. *And be it further enacted*, That all moneys derived from the sale of the lands aforesaid by the State to which the lands are apportioned, and from the sale of land script hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or of some other safe stocks yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in fifth Section of this Act), and the interest of which shall be inviolably appropriated by each State, which may take and claim the benefit of this Act to the endowment, support and maintenance of at least one College, where the leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, and in such manner as the Legislature of the States may prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.

SEC. 5. *And be it further enacted*, That the grant of land and land script hereby authorized shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts.

1. If any portion of the fund invested as provided by the foregoing section, or any portion of the interest thereon, shall by any act or contingency be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth Section of this Act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this Act may be expended for the purchase of lands for sites of experiment farms whenever authorized by the respective Legislatures of said States.

2. No portion of said fund, nor interest thereon, shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

3. Any State which may take and claim the benefit of the provisions of this Act, shall provide within five years at least not less than one College, as described in the fourth Section of this Act, or the grant

to said State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold, and the title to purchasers under the State shall be valid.

4. An annual report shall be made regarding the progress of each College, recording any improvements and experiments made, with their costs and results, and such other matters, including State and industrial statistics, as may be supposed useful; one copy of which shall be transmitted by mail free by each to all the other Colleges which may be endowed under the provisions of this Act, and also one copy to the Secretary of the Interior.

5. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the State at the maximum price, and the number of acres proportionately diminished.

6. No State, while in a condition of rebellion or insurrection against the government of the United States, shall be entitled to the benefit of this Act.

7. No State shall be entitled to the benefit of this Act unless it shall express the acceptance thereof by the Legislature within two years of the date of its approval by the President.

SEC. 6. *And be it further enacted*, That land scrip issued under the provisions of this Act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three.

SEC. 7. *And be it further enacted*, That the land officers shall receive the same fees for locating land scrip issued under the provisions of this Act as are now allowed for the location of military bounty land warrants under existing laws: *Provided*, That maximum compensation shall not be thereby increased.

SEC. 8. *And be it further enacted*, That the Governors of the several States to which scrip shall be issued under this Act shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved July 2, 1862.

AN ACT to establish Agricultural Experiment Stations in connection with the colleges established in the several States under the provisions of an Act approved July 2, 1862, and of the Acts supplementary thereto.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science, there shall be established, under direction of College or Colleges, or Agricultural Department of Colleges in each State or Territory established, or which may hereafter be established, in accordance with the provisions of an Act approved July 2, 1862, entitled "An Act donating public lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts," or any of the supplements to said Act, a department known and designated

as an "Agricultural Experiment Station:" *Provided*, That any State or Territory in which two such Colleges have been or may be so established, the appropriation hereinafter made to such State or Territory shall be equally divided between such Colleges, unless the Legislature of such State or Territory shall otherwise direct.

SEC. 2. That it shall be the object and duty of said Experiment Stations to conduct original researches or verify experiments on the physiology of plants and animals; the disease to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying condition and needs of the respective States and Territories.

SEC. 2. That in order to secure, as far as practicable, uniformity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to furnish forms, as far as practicable, for the tabulation of results of investigation or experiments; to indicate, from time to time, such lines of inquiry as to him shall seem most important; and, in general, to furnish such advice and assistance as will promote the purposes of this Act. It shall be the duty of each of said stations annually, on or before the first day of February, to make to the Governor of the State or Territory in which it is located a full and detailed report of its operations, including a statement of receipts and expenditures, a copy of which report shall be sent to each of said stations, to the Commissioner of Agriculture, and to the Secretary of the Treasury of the United States.

SEC. 4. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore prescribed, the sum of \$15,000 per annum is hereby appropriated to each State, to be especially provided for by Congress in the appropriations from year to year, and to each Territory entitled under the provisions of Section eight of this Act, out of any money in the treasury proceeding from the sales of public

lands, to be paid in equal quarterly payments, on the first day of January, April, July and October in each year, to the Treasurer or other officer duly appointed by the governing boards of said Colleges to receive the same, the first payment to be made on the first day of October, 1887: *Provided, however,* That out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection, enlargement, or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five per centum of such annual appropriation may be so expended.

SEC. 6. That whenever it shall appear to the Secretary of the Treasury from the annual statement of receipts and expenditures of any of said stations that a portion of the preceding annual appropriation remains unexpended, such amount shall be deducted from the succeeding annual appropriation to each station, in order that the amount of money appropriated to any station shall not exceed the amount actually and necessarily required for its maintenance and support.

SEC. 7. That nothing in this Act shall be construed to impair or modify the legal relation existing between any of the said Colleges and the government of the States or Territories in which they are respectively located.

SEC. 8. That in States having Colleges entitled under this Section to the benefits of this Act and having also Agricultural Experiment Stations established by law separate from said Colleges, such States shall be authorized to apply such benefits to experiments at stations so established by such States; and in case any State shall have established under the provisions of said Act of July 2d aforesaid, an Agricultural Department or Experiment Station, in connection with any University, College, or institution not distinctively an Agricultural College, or School, and such States shall have established or shall hereafter establish a separate Agricultural College or School, which shall have connected therewith an Experimental Farm or Station, the Legislature of such State may apply in whole or in part the appropriation made by this Act, to separate Agricultural College or School, and no Legislature shall by contract expressed or implied disable itself from so doing.

SEC. 9. That the grant of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purposes of said grants: *Provided,* That payment of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of its Legislature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to by the Secretary of the Treasury.

SEC. 10. Nothing in this Act shall be held or construed as binding the United States to continue any payments from the Treasury to any or all the States or institutions mentioned in this Act, but Congress may at any time amend, suspend or repeal any or all the provisions of this Act.

Approved March 2, 1887.

AN ACT TO PROVIDE FOR AN INCREASED ANNUAL APPROPRIATION FOR AGRICULTURAL EXPERIMENT STATIONS AND REGULATE THE EXPENDITURE THEREOF.

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That there shall be, and hereby is, annually appropriated, out of any money in the Treasury not otherwise appropriated, to be paid as hereinafter provided, to each State and Territory for the more complete endowment and maintenance of agricultural experiment stations now established, or which may be hereafter established, in accordance with the Act of Congress, approved March second, eighteen hundred and eighty-seven, the sum of five thousand dollars for the year ending June thirtieth, nineteen hundred and six, and an annual increase of the amount of such appropriation thereafter for five years by an additional sum of two thousand dollars over the preceding year, and the annual amount to be paid thereafter to each State and Territory shall be fifteen thousand dollars, to be applied only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States, having due regard to the varying conditions and needs of the respective States or Territories.

SEC. 2. That the sums hereby appropriated to the States and Territories for the further endowment and support of agricultural experiment stations shall be annually paid, in equal quarterly payments, on the first day of January, April, July and October of each year, by the Secretary of the Treasury, upon the warrant of the Secretary of Agriculture, out of the Treasury of the United States, to the Treasurer or other officer duly appointed by the governing boards of said experiment stations to receive the same, and such officers shall be required to report to the Secretary of Agriculture, on or before the first day of September of each year, a detailed statement of the amount so received and of its disbursement, on schedules prescribed by the Secretary of Agriculture. The grants of money authorized by this Act are made subject to legislative assent of the several States and Territories to the purpose of said grants: *Provided*, That payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of Legislature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified by the Secretary of the Treasury.

SEC. 3. That if any portion of the moneys received by the designated officer of any State or Territory for the further and more complete endowment, support and maintenance of agricultural experiment stations as provided in this Act shall by any action or contingency be diminished or lost, or be misapplied, it shall be replaced by said State or Territory to which it belongs, and until so replaced no subsequent appropriation shall be apportioned or paid to such State or Territory; and no portion of said moneys, exceeding five per centum of each annual appropriation, shall be applied directly or indirectly under any pretense whatever to the purchase, erection,

preservation or repair of any building or buildings, or to the purchase or rental of land. It shall be the duty of each of said stations annually, on or before the first day of February, to make to the Governor of the State or Territory in which it is located, a full and detailed report of its operations, including a statement of receipts and expenditures, a copy of which report shall be sent to each of said stations, to the Secretary of Agriculture and to the Secretary of the Treasury of the United States.

SEC. 4. That on or before the first day of July in each year after the passage of this Act the Secretary of Agriculture shall ascertain and certify to the Secretary of the Treasury as to each State and Territory, whether it is complying with the provisions of this Act and is entitled to receive its share of the annual appropriation for agricultural experiment stations under this Act, and the amount which thereupon each is entitled, respectively, to receive. If the Secretary of Agriculture shall withhold a certificate from any State or Territory of its appropriation, the facts and reasons therefor shall be reported to the President, and the amount involved shall be kept separate in the Treasury until the close of the next Congress, in order that the State or Territory may, if it should so desire, appeal to Congress from the determination of the Secretary of Agriculture. If the next Congress shall not direct such sum to be paid, it shall be covered into the Treasury; and the Secretary of Agriculture is hereby charged with the proper administration of this law.

SEC. 5. That the Secretary of Agriculture shall make an annual report to Congress on the receipts and expenditures and work of the agricultural experiment stations in all the States and Territories, and also whether the appropriation of any State or Territory has been withheld, and if so, the reasons therefor.

SEC. 6. That Congress may at any time amend, suspend, or repeal any or all of the provisions of this Act.

Approved March 16th, 1906.

AN ACT to supply a portion of the public lands to the more complete endowment and support of Colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an Act of Congress, approved July second, eighteen hundred and sixty-two.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be, and hereby is, annually appropriated out of any money in the Treasury not otherwise appropriated, arising from the sales of public lands, to be paid as hereinafter provided, to each State and Territory for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts now established, or which may be hereafter established, in accordance with an Act of Congress, approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirtieth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years by an additional sum of one thousand dollars over the preceding year, and the annual

amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction: *Provided*, That no money shall be paid out under this Act to any State or Territory for the support and maintenance of a college where a distinction of race or color is made in admission of students, but the establishment and maintenance of such colleges separately for white and colored students shall be held to be a compliance with the provisions of this Act if the funds received in such State or Territory be equitably divided as hereinafter set forth: *Provided*, That in any State in which there has been one college established in pursuance of the Act of July second, eighteen hundred and sixty-two, and also in which an educational institution of like character has been established, or may be hereafter established, and is now aided by such State from its own revenue for the education of colored students in agriculture and the mechanic arts, however named or styled, or whether or not it has received money heretofore under the Act to which this Act is an amendment, the Legislature of such State may propose and report to the Secretary of the Interior a just and equitable division of the funds to be received under this Act between one college for white students and one institution for colored students established as aforesaid, which shall be divided into two parts and paid accordingly, and thereupon such institution for colored students shall be entitled to the benefits of this Act and subject to its provisions, as much as it would have been if it had been included under the Act of eighteen hundred and sixty-two, and the fulfillment of the foregoing provisions shall be taken as a compliance with the provision in reference to separate colleges for white and colored students.

SEC. 2. That the sum hereby appropriated to the States and Territories for the further endowment and support of colleges shall be annually paid on or before the thirty-first day of July of each year, by the Secretary of the Treasury upon the warrant of the Secretary of the Interior, out of the Treasury of the United States, to the State or Territorial Treasurer or to such officer as shall be designated by the laws of such State or Territory to receive same, who shall, upon the order of the trustees of the college, or the institution for colored students, immediately pay over said sums to the Treasurers of the respective colleges or other institutions entitled to receive the same, and such Treasurers shall be required to report to the Secretary of Agriculture and to the Secretary of the Interior on or before the first day of September of each year, a detailed statement of the amount so received and of its disbursement. The grants of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purpose of said grants: *Provided*, That payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of Legislature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 3. That if any portion of the moneys received by the designated officer of the State or Territory for the further and more complete endowment, support and maintenance of colleges, or of institutions for colored students, as provided in this Act, shall, by any action or contingency, be diminished or lost, or be misapplied, it shall be replaced by the State or Territory to which it belongs, and until so replaced no subsequent appropriation shall be apportioned or paid to such State or Territory; and no portion of said moneys shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings. An annual report by the President of each of said colleges shall be made to the Secretary of Agriculture, as well as to the Secretary of the Interior, regarding the condition and progress of each college, including statistical information in relation to its receipts and expenditures, its library, the number of its students and professors, and also as to any improvements and experiments made under the direction of any Experimental Stations attached to said colleges, with their costs and results, and such other industrial and economical statistics as may be regarded as useful, one copy of which shall be transmitted by mail to all other colleges further endowed under this Act.

SEC. 4. That on or before the first day of July in each year, after the passage of this Act, the Secretary of the Interior shall ascertain and certify to the Secretary of the Treasury as to each State and Territory, whether it is entitled to receive its share of the annual appropriation for colleges, or of institutions for colored students, under this Act, and the amount which thereupon each is entitled respectively, to receive. If the Secretary of the Interior shall withhold a certificate from any State or Territory of its appropriation the facts and reasons therefor shall be reported to the President, and the amount involved shall be kept separate in the treasury until the close of the next Congress, in order that the State or Territory may, if it should so desire, appeal to Congress from the determination of the Secretary of the Interior. If the next Congress shall not direct such sum to be paid it shall be covered into the treasury. And the Secretary of the Interior is hereby charged with the proper administration of this law.

SEC. 5. That the Secretary of the Interior shall annually report to Congress the disbursements which have been made in all the States and Territories, and also whether the appropriation of any State or Territory has been withheld, and if so, the reasons therefor.

SEC. 6. Congress may at any time amend, suspend or repeal any or all of the provisions of this Act.

Approved August 30, 1890.

State Laws Relating to the College

In November, 1889, the General Assembly passed the following law, authorizing the establishment of the Clemson Agricultural College of South Carolina:

SECTION 1300. The Honorable Thomas G. Clemson having departed this life on the sixth day of April, A. D. 1888, leaving of force his last will and testament, which was duly admitted to probate on the twentieth day of April, 1888, in the office of the Judge of Probate of the County of Oconee, in the State of South Carolina, wherein he devised and bequeathed to his executor, Richard W. Simpson, of Pendleton, South Carolina, a tract of land situated on Seneca River, in Oconee County, in said State, containing eight hundred and fourteen acres, more or less, known as the Fort Hill plantation, as well as all his other property, both real and personal, except certain legacies in the said will mentioned and provided for, all in trust to convey to the State of South Carolina when the said State shall accept the same for the purpose of establishing and maintaining an Agricultural and Mechanical College upon the aforesaid Fort Hill plantation upon the terms and conditions of said will, the State of South Carolina hereby expressly declares that it accepts the devise and bequest of Thomas G. Clemson, subject to the terms and conditions set forth in his last will and testament, and the Treasurer of the State is hereby authorized and empowered to receive and securely hold the said property, both real and personal, and to execute all necessary papers and receipts therefor as soon as the said executor shall convey and transfer the said devise and bequest to the State.

SEC. 1301. The deed and transfer of said property to the State having been duly executed and made by the said executor, in accordance with the provisions of said will, an Agricultural and Mechanical College in connection with the aforesaid devise and bequest, to be styled "The Clemson Agricultural College of South Carolina," and situated at Fort Hill, in Oconee County, on the plantation so devised; in which College shall be taught all branches of study pertaining to practical and scientific agriculture and other industries connected therewith, and such other studies as are not inconsistent with the terms of the said will.

SEC. 1302. The said College shall be under the management and control of a Board of thirteen Trustees composed of the seven members nominated by said will and their successors, and six members to be elected by the Legislature in Joint Assembly.

SEC. 1308. One-half of the Land Scrip Fund heretofore vested by Section 1045 of the General Statutes (1882) in the Board of Trustees of the University of South Carolina is hereby vested in the six members of the Board of Trustees of the Clemson Agricultural College elected by the General Assembly; and the State Treasurer is authorized and required to issue a certificate of State stock in the sum of ninety-five thousand nine hundred dollars, bearing interest at the rate of six per centum per annum, payable semi-annually, to the said six members of the said Board of Trustees, to be held as a perpetual fund, the capital of which shall forever remain undiminished, the income of said fund to be used by said Board of Trustees for the

building and maintenance of the said Clemson Agricultural College, in accordance with the purposes for which the said Land Scrip was donated by the Act of Congress in relation thereto.

SEC. 1039. The annual grant of fifteen thousand dollars, commonly known as the Hatch Bill fund, made to the State of South Carolina by the Congress entitled "An Act to establish agricultural experiment stations in connection with the colleges established in the several States under the provisions of an Act approved July second, eighteen hundred and sixty-two, and of the Act supplementary thereto," approved March 2d, 1887, shall be and hereby is, withdrawn from the control of the Board of Trustees of the University of South Carolina, in whom it was vested by an Act entitled "An Act to amend Chapter XX. of the General Statutes, entitled 'Of the University of South Carolina,'" approved December 22, 1887; and the said grant of fifteen thousand dollars is hereby vested in the six members of the Board of Trustees of the Clemson Agricultural College of South Carolina chosen by the General Assembly; and an agricultural experiment station shall be established in connection with the said Clemson Agricultural College, and under the direction of the Board of Trustees thereof, to be supported by said grant according to the provisions of the Act of Congress hereinbefore mentioned.

SEC. 1310. The Department of Agriculture of this State, as heretofore constituted and provided for by law, is abolished, and also the office of Commissioner of Agriculture for this State.

SEC. 1311. All the powers, duties, rights and privileges heretofore vested in and exercised by the Commissioner of Agriculture and the Department of Agriculture of this State are hereby vested in and devolved upon the Board of Trustees of the Clemson Agricultural College of South Carolina, except that said Board shall not have any rights, powers or privileges in reference to or in connection with the management and control of the rights and interests of the State in the phosphate rock or phosphatic deposits in the navigable streams and marshes thereof.

SEC. 1319. All the privilege tax on fertilizers heretofore required to be paid to the Commissioner of Agriculture shall in the future be paid to the Treasurer of the State, subject to the order of the Board of Trustees of the Clemson Agricultural College of South Carolina; and so much of the money so received as shall be necessary to defray the expenses of the Board in performing the duties now by this Chapter devolved upon them shall be thus used, and the balance shall go to the said College, for its erection and maintenance.

SEC. 1320. A municipal corporation is hereby created, known as Clemson College, the limits of which shall consist of all the lands belonging to the said College and cover all the territory included in a circle formed with the College building as a center, with a radius of five miles, thus making the diameter of the circle ten miles, within which boundaries the jurisdiction of the corporation shall extend. No dispensary shall ever be located at Calhoun.

The General Assembly also passed the following law in reference to the appropriation made by Congress under the provisions of the Act approved August 30th, 1890:

SEC. 1299. All sums which shall be received by the State from the United States Government, under the provisions of the Act of Congress approved August 30th, 1890, entitled "An Act to apply a portion of the public lands to the more complete endowment and support of colleges for the benefit of agriculture and mechanic arts established under the provisions of an Act of Congress approved July 2d, 1862," shall be equally divided between the Colored Normal and Industrial College and Clemson Agricultural College to the purposes specified in said Act.

Law Relating to the State Geologist

SECTION 1. *Be it enacted by the General Assembly of the State of South Carolina*, That a section be added to Article VI., under title "The State Geologist," Civil Code of South Carolina, Vol. I., after Section 740, to be known as Section 740a. That the State Geologist furnish to Clemson Agricultural and Mechanical College as many duplicate specimens of minerals collected by him as may be practicable: *Provided*, Said College shall pay transportation charges.

Approved the second day of March, A. D. 1903.

AN ACT to provide for Beneficiary Scholarships in the Clemson Agricultural College of South Carolina.

SECTION 1. *Be it enacted by the General Assembly of the State of South Carolina*, That there are hereby established and created one hundred and twenty-four (124) beneficiary scholarships in the Clemson Agricultural College of South Carolina, and each of said scholarships shall be of the value of one hundred dollars per annum, and shall be apportioned and distributed among the several Counties of the State in the same manner as the Members of the House of Representatives are apportioned, so that each County shall have as many scholarships as such County is entitled to Members in the House of Representatives.

SEC. 2. That the said scholarships shall be awarded by the State Board of Education, upon the recommendation of the County Boards of Education of the several Counties, to the most worthy and needy young men of such age as is fixed by the Board of Trustees of said College for other students, who shall have passed an approved entrance examination upon the common school branches and made at least sixty per cent. upon such examination; and preference shall be given to those young men who desire to take the agricultural course.

SEC. 3. The questions for such examinations shall be prepared by the President or some member or members of the Faculty of the said Clemson Agricultural College, under the direction of the President, and shall be forwarded to the respective County Boards of Education on or before the 15th day of July in each year, together with a statement showing the number of vacant scholarships to which each County is entitled; and the said County Board of Education shall hold the said examinations and thereafter read and grade the examination papers of all applicants and forward the same to the State Board of Education with their recommendations as to the award of the scholarships.

SEC. 4. That before applying for the said scholarships, applicants shall make proof under oath to their respective County Boards of Education, as required by law for scholarships in the South Carolina Military Academy, of their financial inability to attend college, before they shall receive from said Board permission to stand such examination.

SEC. 5. That scholarships shall be paid from the regular income of said Clemson Agricultural College as now provided by law, and shall each continue for the term of four years, or for such length of time as the beneficiary shall be able to maintain himself and comply with the rules of the College; and the said sum of one hundred dollars per annum shall be placed to the credit of each of said beneficiaries, and applied towards the payment of his board and other necessary school expenses.

SEC. 6. That this Act shall go into effect from and after the first day of July, A. D. 1904.

Approved the 25th day of February, A. D. 1904.

AN ACT to set apart and establish Christmas holidays for the State institutions of higher learning in the State of South Carolina.

SECTION 1. *Be it enacted by the General Assembly of the State of South Carolina,* That all the State Colleges shall suspend exercises for a period of not exceeding ten days, including the time required for going from and returning to said Colleges, said period to include Christmas day and New Years day.

Approved the 17th day of February, A. D. 1906.

Graduates 1896-1905

Below are given the occupations and addresses of the alumni, so far as ascertainable at the College, although in several instances, as indicated, these are not positively known. This preliminary and imperfect list is published here, however, in the hope that it may serve as an aid in the preparation of a complete record of all alumni from the time of graduation, which it is the purpose of the College to compile and publish from time to time in pamphlet form. Graduates, former students, and friends of the institution are requested to co-operate in making this record as nearly complete as possible and in the effort to keep it constantly up to date. The graduates themselves are specially urged to send notice promptly of all changes of occupation or address, promotions, honors, etc.

Information for this record should be addressed to Prof. A. G. Shanklin, Registrar, Clemson College, S. C.

[NOTE—Courses pursued are indicated by initials in parentheses: A, agricultural; C, civil engineering; M, mechanical-electrical; T, textile. The numbers accompanying these show years of graduation.]

ADAMS, W. G. (C '00), Locating Engineer, with S. & W. Ry. Co., Bristol, Va.-Tenn.

ALFORD, N. H. (T '03), Instructor in Manual Training, City Schools, Marion, S. C.

ALL, JOHN E. (A '00), Cotton Broker's Office, Savannah, Ga.

ALL, PERCY H. (M '01), No. 120 W. Hull St., Savannah, Ga.

ANDERSON, J. W. (T '01), Chester, S. C. (?)

AULL, BENEDICT M. (M '96), Supt. Pendleton Mfg. Co., Autun, S. C.

AYER, LOUIS W. (A '00), Tobacco Investigation, Bureau of Soils, Dep't of Agri., Marion, Ala.

BAKER, V. (M '04), Student, Wis. Univ., Madison, Wis.

BALLENGER, C. P. (C '05), Engineer, So. Railway Co., Charlotte, N. C.

BAMBERG, G. E. (M '02), Jeweler, Bamberg, S. C.

- BARNWELL, W. M. (M '03), Southeastern Tariff Association, Birmingham, Ala.
- BARRE, B. H. (M '02), Farming, Batesburg, S. C.
- BARRE, H. W. (A '05), Student, Uni. Neb.
- BARRETT, A. R. (T '02), Chicora Cotton Mills, Rock Hill, S. C.
- BEATY, J. T. (C '03), Liddell Mfg. Co., Charlotte, N. C.
- BEATY, W. S. (T '05), Orr Mill, Anderson, S. C.
- BLACK, W. E. G. (M '03), with F. L. Bryant, Spartanburg, S. C.
- BLAINE, J. MELVILLE (A '96), Swift & Co., Montgomery, Ala.
- BLEASE, J. W. (M '01), Electrician, Piedmont Electric & Con. Co., Anderson, S. C.
- BOINEAU, C. E. (T '03), Teacher, Columbia, S. C.
- BOULWARE, GEORGE P. (A '96), Farming, Newberry, S. C.
- BOWEN, JOHN T. (M '96), Draftsman, Newport News Shipbuilding Co., Newport News, Va.
- BOYKIN, E. B. (A '02), Department of Agriculture, Washington, D. C.
- BOYKIN, L. E. (A '05), Law Student, and Secretary to Senator Latimer, Columbia Univ., Washington, D. C.
- BRADFORD, J. L. (C '03), Chief Draftsman, Seaboard Air Line Railway Co., Portsmouth, Va.
- BRADLEY, J. TATE (M '96), Farmer, Troy, S. C.
- BREAZEALE, JAMES FRANK (A '96), Chemist, Bureau of Soils, Dept. of Agriculture, Washington, D. C.
- BROCKMAN, E., JR., (A '02), Clerk, Hotel Argyle, Charleston, S. C.
- BRODIE, J. (T '05), In charge dyeing plant, Huntsville, Ala.
- BROWN, E. F. (M '04), Bell Telephone Co., Columbia, S. C.
- BROWN, J. H. (T '02), Merchant, Mountain Rest, S. C.
- BROWNE, D. OSCAR (A '98), Sec.-Trea. Peoples Oil & Fertilizer Co., Anderson, S. C.
- BRYAN, ARTHUR BUIST (A '98), Assist. Professor of English, Clemson College, S. C.
- BRYAN, S. G. (A '04), Supt. Alderman's Stock Farm, Alcolu, S. C.
- BRYANT, FRED L. (M '96), Consulting Engineer, Spartanburg, S. C.

- BURGESS, JUNIUS M. (A '02), Assistant in Dairying and Animal Industry, Clemson College, S. C.
- BURGESS, WILLIAM A. (C '01), Coal River Railway Co., St. Albans, W. Va.
- BUTLER, A. A. (A '01), Spartanburg, S. C.
- CAIN, W. O. (T '03), Melrose Knitting Mill, Raleigh, N. C.
- CALDWELL, J. C. L. (M '05), Sou. Ry., Columbia, S. C.
- CALHOUN, J. S., JR. (C '99), Supt. of Construction for Moise de Leon, Atlanta, Ga.
- CALHOUN, PATRICK N. (M '96), Swift & Co., Macon, Ga.
- CAMPBELL, E. G. (M '02), General Electric Co., Schenectady, N. Y.
- CANNON, H. L. (T '01), Hartsville Cotton Mill, Hartsville, S. C.
- CANNON, R. S. (M '00), Elec. Eng., Catawba Power Co., Rock Hill, S. C.
- CANTEY, H. T. (C '02), Asst. City Engineer, Birmingham, Ala.
- CARPENTER, WADE HAMPTON (M '96), 2d Lieutenant U. S. Army, Instructor in Math., West Point, N. Y.
- CARR, A. B. (M '02), Buckeye Cotton Oil Co., Jackson, Miss.
- CAUGHMAN, J. E. (M '00), Asst. Cashier Bank of Edgefield, Edgefield, S. C.
- CHAPMAN, W. E. (T '02), Teacher, Denver, S. C.
- CHEATHAM, J. E. (A '01), Abbeville, S. C.
- CHISOLM, W. B. (M '03), Yard Master, Charleston Mining Co., Charleston, S. C.
- CHREITZBERG, A. M. (M '96), Southern Railway Co., Washington, D. C.
- CHREITZBERG, CHAS. K. (C '99), Chief Engineer, Va. Passenger and Power Co., Richmond, Va.
- CLINKSCALES, G. B. (M '02), Instructor, Wofford College, Spartanburg, S. C.
- CLINKSCALES, LLOYD D. (T '00), Traveling for Heinz Pickle Co., Spartanburg, S. C.
- COLE, W. F. (T '02), Medical Student, Johns Hopkins University.
- COLEMAN, W. W. (M '02), Civil Engineer, U. S. Gov. Service, Philippine Islands.
- CONNOR, J. R. (A '04), Farming, Eutawville, S. C.

- COPE, F. E. (T '05), with Liberty Cotton Mill, Liberty, S. C.
COTHRAN, P. C. (C '04), S. A. L. Ry. Co., Coal City, Ala.
COTHRAN, THOS. W. (M '96), S. A. L., Talladega, Ala.
COTHRAN, W. B. (T '02), Warrant Office, N. Y. Navy Yard, U. S. Navy.
CRAWFORD, FRANK (M '02), Inspector, U. S. Navy Yard, Charleston, S. C.
CROMER, B. C. (T '02), Teaching, Anderson, S. C.
CROUCH, H. W., JR. (C '05), S. A. L., Waldo, Fla.
CULLUM, J. C. (T '03), Shetucket Mfg. Co., Norwich, Conn.
CUMMINGS, J. P. (T '03), Designer, Laurens Cotton Mills, Laurens, S. C.
CUNNINGHAM, F. H. (T '03), Civil Engineer, Anderson, S. C.
CUNNINGHAM, J. G. (T '03), Mill Engineer, with J. E. Sirrine, Greenville, S. C.
DARLINGTON, WM. R., JR. (T '01), Traveling for Fertilizer Co., Savannah, Ga.
DESAUSSURE, F. G. (M '03), Erie Engine Works, Meadville, Pa.
DIBBLE, E. B. (M '06), Westinghouse Mfg. Co., Pittsburg, Pa.
DODD, H. B. (C '00), American Bridge Co., Charleston, S. C.
DONALDSON, J. R. (T '00), Laurens Cotton Mills, Laurens, S. C.
DOUTHIT, C. (M '02), Buckeye Cotton Oil Co., Augusta, Ga.
DOWLING, DECANIA (M '96), Hammond Typewriter Co., Columbia, S. C.
DUCKWORTH, JOS. C. (T '01), Williamston Oil Mill, Williamston, S. C.
EARLE, D. E. (T '03), Issaqueenah Cotton Mills, Central, S. C.
EARLE, ELIAS P. (M '96), Seneca Iron Works, Seneca, S. C.
EARLE, J. C. (M '02), Anderson, S. C.
ELDER, M. L. (M '99), General Electric Co., Schenectady, N. Y.
ELIAS, P. L. (M '04), with Schoenberg & Co., Electrical Contractors, New York City.
ELLIOTT, T. K. (M '05), New York Telephone Co.
ELLIS, E. D. (M '03), City Power and Lighting Plant, Plant City, Fla.

- EPPS, H. G. (C '00), Farmer, Midland City, Ala.
EPPS, S. W. (A '03), Farmer, Kingstree, S. C.
EVANS, R. P., JR. (M '05), Westinghouse Mfg. Co., Pittsburgh, Pa.
FAIR, W. N. (T '01), Teacher, Edgefield, S. C.
FARIS, S. J. (M '04), Catawba Power Co., Rock Hill, S. C.
FELDER, S. I. (M '04), N. Y. Telephone Co., New York.
FINGER, E. R. (C '03), Civil Engineer, Fort Pitt Bridge Works, Cannonsburg, Pa.
FLETCHER, B. A. (C '00), Merchant, Gibson, N. C.
FOLK, J. FRANCIS (A '96), Principal Holly Hill Classical Institute, Holly Hill, S. C.
FORD, S. (T '04), Cotton Mill, Chester, S. C.
FORSYTHE, ROBT. G. (M '01), U. S. Navy Yard, Brooklyn, N. Y.
FOX, L. W. (T '03), Shetucket Mfg. Co., Norwich, Conn.
FREEMAN, BENJ. (A '03), Asst. Chemist, Clemson College, S. C.
FURMAN, CHARLES M., JR. (A '96), Cashier, Coleman-Wagener Co., Charleston, S. C.
GANDY, A. A. (T '05), Cotton Mill, Darlington, S. C.
GANDY, T. S. (M '03), General Electric Co., Schenectady, N. Y.
GARDNER, B. H. (M '03), General Electric Co., Schenectady, N. Y.
GARRIS,* JOHN SAM (A '98), Lawyer, Spartanburg, S. C.
GARRISON, W. D. (A '03), Clemson College Coast Experiment Station, Charleston, S. C.
GELZER, JOHN (M '04), Nernst Lamp Co., Pittsburg, Pa.
GENTRY, CHAS. W. (A '98), Physician, Enoree, S. C.
GEORGE, W. D. (M '00), Electrician, Watts Cotton Mills, Laurens, S. C.
GETTYS, J. E. (T '02), Asst. Supt. Highland Park Mills, No. 2, Rock Hill, S. C.
GIGNILLIAT, C. N. (M '02), Peoples Bank, Seneca, S. C.
GLENN, J. P. (T '03), with Wm. S. Glenn, stocks and bonds, Spartanburg, S. C.
GLENN, T. KNOX (M '01), General Electric Co., Schenectady, N. Y.
GOGGANS, J. C. (M '05), Electrician, Newberry, S. C.

*Died November 28, 1903.

- GOODING, PERCY H. (A '96), Merchant and Farmer, Crock-
ettville, S. C.
- GOODING, R. F. (M '05), Westinghouse Mfg. Co., Pittsburg,
Pa.
- GRACE, M. A. (M '04), U. S. Navy Yard, Charleston, S. C.
- GRAY, HARRY K. (A '00), City Post Office, Greenville, S. C.
- GRAY, JOS. J., JR. (C '00), Mgr. Farmers Oil Mill, Brunson,
S. C.
- GREEN, H. (M '03), N. Y. Telephone Co., New York, N. Y.
- GUNBY, F. M. (M '02), Asst. Engineer, Technological
Building, Boston, Mass.
- HAGOOD, C. B. (T '03), Glenwood Cotton Mills, Easley, S. C.
- HALL, V. B. (M '04), Draftsman, G. E. Co., Schenectady,
N. Y.
- HALLUM, RICHARD T. (A '98), County Supt. Education,
Pickens, S. C.
- HAMILTON, R. G. (A '96), Physician, Converse, S. C.
- HAMLIN, F. T. (T '04), Anderson, S. C.
- HANVEY, GEORGE A. J. (A '98), Veterinarian, U. S. Army,
Fort Adams, R. I.
- HANVEY, J. T. (M '98), U. S. Navy Yard, Portsmouth, Va.
- HARDIN, G. H. (A '02), Chemist, Sugar Experiment Station,
Audubon Park, New Orleans, La.
- HARRELL, J. E. (M '03), United Railways & Electric Co.,
Baltimore, Md.
- HART, GEO. W. (M '96), Books and School Furnishings,
Greenwood, S. C.
- HARVEY, T. M. (M '03), Bell Telephone Co., Charleston,
S. C.
- HAYNESWORTH, R. B.* (M '03), Electric Light & Power
Co., Darlington, S. C.
- HENRY, A. M. (M '04), Buckeye Cotton Oil Co., Augusta,
Ga.
- HENRY, DAVID HILL (A '98), Asst. Professor of Chemistry,
Clemson College, S. C.
- HILL, S. T. (M '04), Student, Univ. Chicago, Chicago, Ill.
- HILL, WM. G. (M '01), Electrician, U. S. Navy Yard, Beau-
fort, S. C.
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*Died August 16, 1905.

- HOLMAN, A. E. (M '04), Westinghouse Elec. & Mfg. Co.,
Pittsburg, Pa.
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Clemson College, S. C.
- HOOK, WM. N. (C '99), Alderman Lumber Co., Alcolu, S.
C.
- HUGHES, E. T. (A '01), Lawyer, Marion, S. C.
- HUMBERT, D. G. (T '03), Easley, S. C.
- HUNTER, JOSEPH E. (M '96), Asst. Prof. of Mathematics,
Clemson College, S. C.
- JEFFARIES, JOHN W. (C '99), Teaching.
- JEFFRIES, S. L. (A '03), Teacher, Gaffney, S. C.
- JENKINS, J. M. (A '05), Foreman S. C. Experiment Station,
Clemson College.
- JENNINGS, DAVID (T '02), Designer, Russell Mfg. Co., Mid-
dletown, Conn.
- JENNINGS, H. B., JR. (T '02), Builders' Supplies, Green-
wood, S. C.
- JORDAN, F. M. (M '02), Sec. Seneca Cotton Mills, Seneca,
S. C.
- JOSEY, C. P. (M '05), Anderson Telephone Co., Belton, S. C.
- KAIGLER, B. H. (M '03), American Rubber Co., Columbia,
S. C.
- KAIGLER, JAKE G. (C '01), Civil Engineer, Danville, Ill.
- KENNEDY, B. O. (M '05), Westinghouse Mfg. Co., Pitts-
burg, Pa.
- KENNEDY, J. LELAND (A '00), Teacher, City Schools, Green-
wood, S. C.
- KINSLER, JOHN H. (A '00), Dept. Agriculture, Texas.
- KLUGH, G. F. (A '01), Asst. Expert Drug and Medicinal
Investigation, Dept. Agri., Washington, D. C.
- KLUGH, WILLISTON W. (M '96), Asst. Professor of Draw-
ing, Clemson College, S. C.
- KOHN, DAVID (T '02), Olympia Cotton Mills, Columbia,
S. C.
- LACHICOTTE, F. W., JR. (M '05), Personal Assistant to
Prof. W. M. Riggs, Clemson College.
- LANGLEY, P. G. (M '96), General Electric Co., Schenectady,
N. Y.
- LARSEN, E. J. (M. '02), with D. H. Whitner Construction
Co., Charleston, S. C.

- LARSEN, GEORGE A. (T '03), Am. Pipe Mfg. Co., Charleston, S. C.
- LATHROP, C. E. A. (M '05), with Georgetown Electric Plant.
- LAWRENCE, B. H. (M '03), Electrician, Darlington, S. C.
- LAWTON, FRANK A. (A '00), Physician, in Florida.
- LAWTON, T. OREGON (A '01), Regal Shoe Co., Savannah, Ga.
- LEE, B. F. (M '05), General Electric Co., Schenectady, N. Y.
- LEE, RUDOLPH E. (M '96), Associate Professor of Drawing, Clemson College, S. C.
- LEGERTON, C. W. (T '03), Bartlett Steel Co., Joplin, Mo.
- LEMMON, C. J. (A '05), Medical Student, Johns Hopkins University.
- LEWIS, D. G. K. (M '03), General Electric Co., Construction Work, Gillespie, Ill.
- LEWIS, GUS P. (M '00), Engineer, General Electric Co., Chicago, Ill.
- LEWIS, J. BAXTER (M '01), Chief Electrician, Old Dominion Copper Mining and Smelting Co., Globe, Ariz.
- LEWIS, J. EARLE (M '99), Construction Engineer, General Electric Co., Dallas, Tex.
- LIDE, T. N. (M '04), Wagner Electric Co., St. Louis, Mo.
- LINK, R. L. (M '05), General Electric Co., Schenectady, N. Y.
- LIPSCOMB, L. (C '04), U. & G. S. Ry., Union, S. C.
- LISLES, S. E. (C '00), Bookkeeper, McColl, S. C.
- LITTLE, HUGH F. (T '02), Secretary Crescent Mfg. Co., Spartanburg, S. C.
- LIVINGSTON, V. (M '03), General Electric Co., Schenectady, N. Y.
- MCCRARY, H. N. (T '03), U. S. Navy Yard, Portsmouth, Va.
- MCCRARY, J. ADGER (M '98), Electric Expert, Navy Dept., Washington, D. C.
- MCCULLOUGH, L. H. (A '92), Director Fifth District Exp. Station, Wetumpka, Ala.
- McFADDEN, WILL HARDIN (A '98), Catawba Power Co., Rock Hill, S. C.

- McGREGOR, G. T. (M '02), Greenville, S. C.
- McIVER, E. R. (A '05), Farmer, Darlington, S. C.
- McIVER, G. W. (M '04), Student, Cornell Univ., Ithica, N. Y.
- McLENDON, RALPH (A '99), Lawyer, Bishopville, S. C.
- McLENDON, W. E. (A '01), Bureau of Soils, Department of Agriculture, Washington, D. C.
- McSWAIN, C. W. (T '03), Assistant Professor Designing and Weaving, Clemson College.
- McWHORTER,* W. M. (M '04), Anderson, S. C.
- MAHAFFEY, C. B. (M '98), Chief Engineer, General Electric Co., Denver, Col.
- MANIGAULT, H. M. (M '04), Erie Engine Works, Meadville, Pa.
- MARTIN, J. E., JR. (A '02), Newberry Oil Mill, Newberry, S. C.
- MARVIN, H. W. (M '03); Elec. Machinist, U. S. Navy Yard, Port Royal, S. C.
- MATHIS, ANDREW JACKSON (M '99), G. E. Co., Schenectady, N. Y.
- MATHIS, H. MURRAY (A '01), Truck Farming, Blackville, S. C.
- HATTHEWS, EDGAR M. (M '01), New York Telephone Co., N. Y. City.
- MATTHEWS, H. W. (M '04), Student, Cornell Univ., Ithica, N. Y.
- MAULDIN, C. E. (A '00), Inspector of B. A. I. Room 328, Live Stock Exchange Building, Kansas City, Mo.
- MAULDIN, IVY M. (M '96), Lawyer, Pickens, S. C.
- MAULDIN, W. F. (A '04), Pickens, S. C.
- MAULDIN, L. O. (A '00), Royal London Ophthalmic Hospital, London, England.
- MAXWELL, JEFF D., JR., (M '98), Elec. Engineer, Street Ry. & Light Co., Spartanburg, S. C.
- MAXWELL, JOHN (M '04), G. E. Co., Schenectady, N. Y.
- MEADOR, J. D. (M '02), with Ware & Leland, Brokers, Mobile, Ala.
- MILLER, R. E. (T '04), Southern Agent, Crompton & Knowles Loom Works, Charlotte, N. C.
- MILLING, A. J. (M '03), Teaching, Blackville, S. C.

*Died October 22, 1904.

- MINUS, JOS. P., JR. (A '98), Union Packing Co., St. Louis, Mo.
- MITCHELL, G. F. (A '02), Tea Culture Investigation, U. S. Department of Agriculture, Washington, D. C.
- MOORE, J. HOWARD (A '96), Principal St. George Graded School, St. George, S. C.
- MOORE, PERCY W. (A '98), Traveling for Goodall, Brown & Co., Birmingham, Ala.
- MOORMAN, THOS. S. (A '96), 1st Lieu. U. S. Army, Ft. Slocum, N. Y.
- MOREHEAD, I. H. (M '04), Electrician, Atlanta, Ga.
- MORRISON, G. L. (T '03), Wiscassett Cotton Mills, Albermarle, N. C.
- MUNRO, T. H. (M '02), Electric Light & Power Co., Gaffney, S. C.
- MURPH, M. L. (C '05), Civil Engineer, Jane, Va.
- NEWELL, N. W. (M '03), Road Machine Co., Birmingham, Ala.
- NEWELL, WM. H. (M '01), Special Student, Clemson College.
- NEWMAN, C. H. (M '05), Machinist, Pelzer, S. C.
- NEWMAN, Q. B. (M '01), U. S. S. McCullough, Sansalito, Cal.
- NORRIS, A. PRUE (A '00), Farming, Pelzer, S. C.
- NORRIS, F. K. (A '02), Farming, Vance, S. C.
- NORRIS, G. FURMAN (M '03), Secretary of Norris Cotton Mill, Central, S. C.
- NORTON, C. (M '04), American Bridge Co., Atlanta, Ga.
- PARKS, J. G. (C '05), Southern Railway, Birmingham, Ala.
- PEARMAN, F. E. (T '02), Merchant, Anderson, S. C.
- PEARMAN, S. D. (T '00), U. S. Census Bureau, Washington, D. C.
- PEGUES, B. F. (A '03), Lawyer, Cheraw, S. C.
- PEGUES, OLIN M. (M '96), Farmer, Kolocks, S. C.
- PERRIN, T. S. (T '03), Inspector American Moistening Co., Atlanta, Ga.
- PHILLIPS, T. R. (M '02), Electrician, Railway and Electric Co., Little Rock, Ark.
- PICKETT, E. H. (T '01), Beck & Gregg Hardware Co., Atlanta, Ga.
- PLATT, V. C. (M '04), Navy Yard, Charleston, S. C.

- POE, H. T., JR. (M '02), International Water Co., 112 N. Broad street, Philadelphia, Pa.
- POLLITZER, H. R. (M '03), Superintendent of Electric Light & Power Co., Covington, Ga.
- PORTER, E. E. (Met. '05), Mining Engineer, Bingham's Canyon, Utah.
- PREACHER, G. L. (M '04), Draftsman, Lombard Iron Works, Augusta, Ga.
- PRESCOTT, W. T. (T '02), Merchant, Edgefield, S. C.
- PRIOLEAU, J. FORD (M '03), Swift & Co., Montgomery, Ala.
- QUATTLEBAUM, P. J. (M '03), Superintendent of Fairfax Oil Mill, Fairfax, S. C.
- RAMSEY, H. L. (T '01), Draper Loom Co., Hopedale, Mass.
- RAWL, B. H. (A '00), Bureau of Animal Industry, Department of Agriculture, Washington, D. C.
- REAMER, C. Y. (M '04), Southern Cotton Oil Co., Sumter, S. C.
- REEVES, ROBT. N. (A '01), Gulf Compress Co., Memphis, Tenn.
- REID, C. L. (C '02), Civil Engineer, Power Plant, Petersburg, Va.
- RHODES, F. K. (T '03), Atlantic Coast Line Ry. Shops, Wilmington, N. C.
- RICHARDSON, J. C., JR. (M '05), General Electric Co., Schenectady, N. Y.
- RIGGS, ARTHUR F. (M '00), Construction Engineer, General Electric Co., Gillespie, Ill.
- ROBERTS, O. M. (M '04), Superintendent City Electric Light and Water Plant, Starke, Fla.
- ROBERTSON, BENJ. F. (A '96), Assistant Chemist, S. C. Experiment Station, Clemson College, S. C.
- ROBERTSON, J. T. (M '03), Inspector, Southeastern Tariff Association, Raleigh, N. C.
- ROBERTSON, S. M. (A '02), in charge Chemical Laboratory, Virginia-Carolina Chemical Co., Mt. Pleasant, Tenn.
- RODDEY, J. H. (M '01), General Electric Co., Schenectady, N. Y.
- RODGER, J. M. (M '02), Electrical Engineering Co., St. Louis, Mo.
- ROGERS, D. F. (M '98), Westinghouse Electric Mfg. Co., Pittsburg, Pa.

- RUFF, J. W. (M '05), Navy Yard, Charleston, S. C.
- SADLER, D. H. (M '03), Instructor Stone Mountain Military Academy, Stone Mountain, Ga.
- SAHLMANN, H. C. (C '03), Bartlett Steel Co., Joplin, Mo.
- SALLEY, D. H. (A '02), Farmer, Salley, S. C.
- SALLEY, J. E. (M '01), Electrician and Engineer, City Water and Light Station, Orangeburg, S. C.
- SAMS, M. B. (T '05), Cotton Mill, Union, S. C.
- SANDERS, WM. A. (T '01), Clinton Cotton Mills, Clinton, S. C.
- SARRATT, W. JUDSON (A '98), Farmer and Merchant, Gaffney, S. C.
- SCHIRMER, C. C., JR. (M '05), Piedmont Electric Co., Anderson, S. C.
- SCOTT, W. H. (T '01), Cashier National Biscuit Co., Augusta, Ga.
- SEASE, LAWRENCE A. (M '96), Farmer, Prosperity, S. C.
- SEIGLER, C. H. (M '02), Supt. Oil Mill, Aiken, S. C.
- SHAW, T. C. (T '02), Special Agent, Department of Agriculture, Washington, D. C.
- SHEALEY, A. S. (A '99), Vt. U. S. Government Service, Department of Agriculture, Philippine Islands.
- SIAU, J. R. S., JR. (M '05), Stanley Electric Co., Pittsfield, Mass.
- SIMPSON, JOHN G. (M '96), Cotton Mills, Cartersville, Ga.
- SITTON, M. A. (M '02), Secretary Pendleton Cotton Mills, Pendleton, S. C.
- SLATTERY, L. P. (C '05), City Engineer, Greenville, S. C.
- SLOAN, B. FRANK (A '96), Physician, Walhalla, S. C.
- SLOAN, S. MAXWELL (T '00), 819 Washington St., Greenville, S. C.
- SMITH, HERBERT G. (A '99), Secretary Liberty Cotton Mills, Liberty, S. C.
- SMITH, J. BERNARD (A '98), Teacher, Walterboro, S. C.
- SNEED, W. F. (M '02), General Electric Co., Schenectady, N. Y.
- SORENTRUE, SIMON (M '05), Standard Electric Co., Jacksonville, Fla.
- SPEER, A. J. (M '05), Birmingham, Ala.

- SPENCER, J. H. (T '02), with Barber & Coleman, Greenville, S. C.
- SPENCER, ROBT. LATHAM (A '98), Dentist, Bennettsville, S. C.
- SPENCER, T. B. (T '02), Eureka Cotton Mills, Chester, S. C.
- STEWART, S. C. (M '02), U. S. Steel Corporation, Pittsburg, Pa.
- STOKES, H. G. (M '02), U. S. Gov. Service, Roosevelt, Ariz.
- STRIBLING, J. H. (M '99), Va. Passenger and Power Co., Richmond, Va.
- SULLIVAN, D. A. J. (M '02), 2d Asst. Eng. S. S. Nebraska, Am. Hawaiian, San Francisco, Cal.
- SULLIVAN, J. FRANCIS (M '00), Electrical Draftsman, U. S. Navy Yard, Brooklyn, N. Y.
- SWYGERT, D. B. (M '05), Bell Tel. Co., Columbia, S. C.
- SWYGERT, GEO. H. (M '98), Electrical Draftsman, Navy Department, Washington, D. C.
- TALBERT, A. D. (M '98), Department Commerce and Labor, Washington, D. C.
- TARBOX, J. P. (M '04), General Electric Co., Schenectady, N. Y.
- TAYLOR, IRA B. (A '99), Farmer and Merchant, Greenwood, S. C.
- TAYLOR, W. H. (C '05), S. & W. Ry., Woodlawn, N. C.
- TEMPLETON, W. G. (T '02), Belton Cotton Mills, Belton, S. C.
- TEMPLETON, W. L. (M '04), Electric Plant, Little Rock, Ark.
- TERVEN, LEWIS A. (M '99), Nernst Lamp Co., Pittsburg, Pa.
- TILLMAN, BENJ. R., JR. (A '96), Private Secretary to Senator B. R. Tillman, Washington, D. C.
- TILLMAN, H. C., (M '03), Lawyer, Charleston, S. C.
- TINDAL, A. JACK (M '96), Farmer, Silver, S. C.
- TINSLEY, J. B. (A '02), Farmer, Union, S. C.
- TISON, HUGH R. (A '01), Physician, Allendale, S. C.
- THOMSON, J. CROCKETT (A '99), Chemist, Bartow, Fla.
- THORNWELL, E. A. (M '04), Westinghouse Elec. Mfg. Co., Pittsburg, Pa.
- TOMPKINS, FRANK G. (A '96), Lawyer, Columbia, S. C.

- TURNER, THOMAS H. (M '99), Anderson Water, Light and Power Co., Anderson, S. C.
- TURNIPSEED, B. RHETT (A '96), Pastor Green St. M. E. Church, Columbia, S. C.
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- VOGEL, THEO. R. (M '98), Draftsman, U. S. Navy Yard, Warrington, Fla.
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- WALKER, TOM JEFF (M '98), with W. F. Furtick, Columbia, S. C.
- WALKER, W. FLOWERS (A '99), Chemist, Bartow, Fla.
- WALKER, W. P. (A '04), Farming, Monie, S. C.
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- WARDLAW, W. W. (M '96), Farmer and Merchant, Troy,
- WATKINS, J. B. (M '02), Farming, Ridge Spring, S. C.
- WELLS, CLAUDE H. (A '00), Dentist, Mullins, S. C.
- WERTS, LEROY A. (A '96), Sec. Belton Cotton Mills, Belton, S. C.
- WESTON, W. S. (M '05), Westinghouse Mfg. Co., Pittsburg, Pa.
- WHITE, H. S. (M '04), City Power & Lighting Co., Tallahassee, Fla.
- WHITNEY, J. B. (T '03), Cotton Dealer, Augusta, Ga.
- WIER, J. A. (M '04), Nernst Lamp Co., Pittsburg, Pa.
- WIGGINS, GORDON (A '98), Farmer, Holly Hill, S. C.
- WIGHTMAN, W. M. (M '03), N. Y. Telephone Co., New York, N. Y.
- WILLIAMS, J. F. (T '04), Teaching, Easley, S. C.
- WILLIAMS, R. G., JR. (T '03), Broker, Greenville, S. C.
- WILLIAMS, V. McB. (T '04), with Williams Hardware Co., Greenville, S. C.
- WILSON, H. A. (M '02), Mgr. Climax Electrical Supply and Construction Co., Bluefields, W. Va.
- WISE, W. H. (C '05), S. & W. Ry., Woodlawn, N. C.
- WISE, J. T. (M '98), Torpedo Station, Newport, R. I.
- WYLIE, J. C. (M '03), Electrical Draftsman, Navy Dept., Washington, D. C.
- WYSE, F. C. (C '05), with contractors for Columbia Water Works, Columbia, S. C.

WYSE, J. H. (C '03), Civil Engineer, Tidewater R. R. Co.,
Hellbend, Va.

YOUNG, T. B. (A '03), Drug and Medicinal Plant Investiga-
tion, Dept. of Agr., Ebenezer, S. C.

ZEIGLER, M. E. (A '02), Law Student, Private Sec. to Con-
gressman Lever, Washington, D. C.

Students 1905-1906

Senior Class

NAME	COURSE	COUNTY
D. G. Adams	Civil	Darlington
P. H. Adams	Mech. Elec.	Greenwood
E. P. Alford	Civil	Florence
F. Auld	Mech. Elec.	Greenwood
J. H. Barksdale	Mech. Elec.	Greenwood
G. R. Barksdale	Mech. Elec.	Greenwood
T. F. Barton, Jr.	Mech. Elec.	Orangeburg
W. S. Baskin	Mech. Elec.	Abbeville
W. Beckett	Mech. Elec.	Charleston
J. C. Boesch	Mech. Elec.	Charleston
A. L. Brunson, Jr.	Civil	Edgefield
I. W. Bull	Civil	Orangeburg
A. F. Byars	Agri.	Marion
D. F. Cherry	Civil	Charleston
A. F. Cleveland	Agri.	Spartanburg
C. Coles	Mech. Elec.	Richland
O. L. Derrick	Text.	Lexington
L. C. Dickson	Text.	Mecklenberg, N. C.
A. G. Ellison	Agri.	Fairfield
T. R. Ellison	Mech. Elec.	Fairfield
A. L. Ervin	Civil	Florence
J. A. Gelzer	Mech. Elec.	York
T. L. Goodwin	Civil	Anderson
C. A. Grainger	Text.	Horry
S. P. Harper	Mech. Elec.	Williamsburg
D. H. Hill	Agri.	Abbeville
G. B. Holland	Mech. Elec.	Oconee
L. R. Hoyt	Civil	Sumter
T. B. Jacobs	Agri.	Lexington
H. S. Jenkins	Civil	Barnwell
J. E. Johnson	Agri.	Florence
S. L. Johnson	Text.	Charleston
E. H. Jones	Mech. Elec.	Abbeville
T. E. Keitt	Agri.	Oconee
J. Klinck	Text.	Charleston

NAME	COURSE	COUNTY
W. J. Latimer	Text.	Abbeville
A. R. McAliley	Mech. Elec.	Chester
J. H. McClain	Agri.	Spartanburg
F. B. McLaurin	Text.	Marlboro
L. B. Martin	Agri.	Oconee
W. C. Moore	Agri.	Lee
J. M. Moss, Jr.	Agri.	Orangeburg
J. V. Phillips	Civil	Cherokee
W. A. Putnam, Jr.	Mech. Elec.	Laurens
J. J. Rauch	Text.	Saluda
J. H. Reid	Civil	Anderson
K. O. Rinehart	Mech. Elec.	Saluda
W. A. Sanders	Civil	Anderson
M. A. Savage	Mech. Elec.	Colleton
H. W. Schumpert	Mech. Elec.	Newberry
W. R. Smith	Mech. Elec.	Charleston
L. G. Southard	Agri.	Union
T. E. Stokes	Agri.	Darlington
H. P. Stuckey	Agri.	Darlington
J. C. Summers	Agri.	Orangeburg
F. R. Sweeny	Civil	Spartanburg
S. L. Webb	Civil	Charleston
W. P. White	Mech. Elec.	Beaufort
R. Y. Winters	Agri.	Darlington
J. L. Woodroof	Civil	Chatham, Ga.
J. N. Wright	Mech. Elec.	Laurens

Junior Class

A. J. Allen	Mech. Elec.	Marlboro
W. B. Aull	Agri.	Anderson
J. B. Bailey	Mech. Elec.	Greenwood
M. H. Banks	Mech. Elec.	Orangeburg
A. V. Bethea	Agri.	Marion
T. L. Bissell	Mech. Elec.	Charleston
L. R. Boggs	Mech. Elec.	Pickens
S. I. Bond	Agri.	Beaufort
L. C. Boone	Civil	Orangeburg
T. N. Bristow	Mech. Elec.	Marlboro
A. K. Britt	Mech. Elec.	Abbeville
J. J. Brown	Agri.	Spartanburg

NAME	COURSE	COUNTY
J. M. Bryan	Civil	Charleston
A. L. Campbell	Civil	Hampton
B. D. Carter	Agri.	Colleton
J. C. Clark	Agri.	Marion
F. A. Connor	Mech. Elec.	Greenwood
E. A. Crawford	Agri.	York
H. C. Crews	Mech. Elec.	Greenwood
E. P. Crouch	Civil	Charleston
H. C. Crum	Agri.	Richland
G. D. Curtis	Civil	Chatham, Ga.
R. E. Dalton	Civil	Greenville
C. E. Durant	Civil	Colleton
F. M. Dwight	Mech. Elec.	Sumter
T. D. Eason	Agri.	Charleston
R. A. Easterling	Mech. Elec.	Barnwell
G. H. Folk	Mech. Elec.	Newberry
F. M. Furtick	Mech. Elec.	Lexington
E. V. Garrett	Civil	Laurens
H. E. Giles	Mech. Elec.	Greenwood
R. G. Harris	Agri.	Laurens
A. S. Heyward	Mech. Elec.	Chatham, Ga.
E. T. Heyward	Mech. Elec.	Charleston
J. W. Hicklin	Mech. Elec.	Chester
A. V. Hooks	Civil	Horry
L. S. Horton	Mech. Elec.	Anderson
P. LaV. Howle	Agri.	Darlington
J. S. Hughes	Agri.	Edgefield
C. E. Jones	Agri.	Lexington
G. R. Jones	Mech. Elec.	Sumter
E. M. Kaminer	Agri.	Richland
J. W. Keel	Agri.	Barnwell
W. A. Keenan	Mech. Elec.	Richland
A. M. Klugh	Agri.	Greenwood
W. A. Latimer, Jr.	Civil	Chester
R. H. Lemmon	Agri.	Fairfield
P. Lykes	Agri.	Richland
E. D. McCutchan	Mech. Elec.	Sumter
J. W. McLendon	Agri.	Florence
C. W. Mack	Mech. Elec.	Orangeburg
J. M. Miller	Mech. Elec.	Lexington

NAME	COURSE	COUNTY
H. W. Moore	Agri.	Oconee
H. P. Moses	Mech. Elec.	Sumter
S. R. Perrin	Text.	Union
D. B. Peurifoy, Jr.	Agri.	Saluda
M. M. Platt	Agri.	Berkeley
E. B. Plenge	Mech. Elec.	Charleston
C. T. Pottinger	Mech. Elec.	Chatham, Ga.
P. Quattlebaum	Mech. Elec.	Horry
O. M. Reid	Mech. Elec.	Anderson
R. G. Richardson	Civil	Beaufort
G. DuP. Sanders	Agri.	Barnwell
E. L. Saunders	Mech. Elec.	York
W. L. Schachte	Mech. Elec.	Charleston
F. B. Schirmer	Mech. Elec.	Charleston
W. O. Scott	Agri.	Edgefield
E. M. Shingler	Mech. Elec.	Charleston
W. P. Sloan	Agri.	Anderson
J. M. Smith	Civil	Anderson
P. W. Spencer	Agri.	York
F. M. Stephenson	Mech. Elec.	Lancaster
W. H. Stevens	Agri.	Greenville
W. L. Stone	Mech. Elec.	Colleton
A. B. Taylor	Mech. Elec.	Pickens
F. E. Thomas	Mech. Elec.	Sumter
W. C. Thompson	Civil	Anderson
R. R. Tolbert	Agri.	Greenwood
C. W. Wannamaker	Civil	Orangeburg
W. W. Wannamaker	Agri.	Orangeburg
L. S. Wolfe, Jr.	Agri.	Orangeburg
O. D. Wood	Mech. Elec.	Greenville
W. H. Wylie, Jr.	Mech. Elec.	York

Sophomore Class

M. H. Ackerman	Agri.	Colleton
T. S. Allen	Mech.	Abbeville
R. L. Allston	Agri.	Georgetown
B. L. Allsbrook	Mech.	Horry
J. E. Alverson	Agri.	Spartanburg
S. E. Bailes	Agri.	Lancaster
A. J. Baker	Agri.	Horry

NAME	COURSE	COUNTY
D. N. Baker	Mech.	Florence
A. T. Beaver	Mech.	Richmond, Ga.
G. D. Bellinger, Jr.	Mech.	Barnwell
M. W. Belue	Agri.	Cherokee
A. P. Bethea	Agri.	Marion
J. A. Bethea	Agri.	Florence
J. O. Bethea	Mech.	Marlboro
D. L. Bissell	Agri.	Charleston
S. C. Blease	Agri.	Saluda
J. L. Boyd	Mech.	Laurens
H. C. Brawley	Text.	Chester
D. C. Britt	Mech.	Abbeville
E. B. Brown	Agri.	Anderson
W. W. Brown	Mech.	Clarendon
H. H. Brunson	Agri.	Orangeburg
C. W. Busch	Mech.	Aiken
A. F. Butler	Mech.	Colleton
W. E. Campbell	Civil	Beaufort
C. L. Cannon	Agri.	Newberry
R. B. Carpenter	Mech.	Pickens
J. K. Carwile	Mech.	Abbeville
F. P. Caughman	Agri.	Richland
W. E. Cheatham	Mech.	Greenwood
A. W. Cherry	Agri.	Orangeburg
J. S. H. Clarkson	Agri. —	Richland
B. H. Covington	Agri.	Marlboro
W. H. G. Crawford	Agri.	Anderson
F. J. Crider	Agri.	Orangeburg
F. W. Crisp	Agri.	Laurens
W. H. Cunningham	Mech.	Lancaster
J. P. Darden, Jr.	Text.	Spartanburg
J. R. Davis	Mech.	Laurens
R. C. Dick	Mech.	Kershaw
C. O. Dougherty	Mech.	Orangeburg
W. B. Dowling	Agri.	Hampton
R. B. DuPree	Agri.	Laurens
J. H. Earle	Agri.	Pickens
W. L. Easterlin	Mech.	Colleton
J. M. Ervin	Agri.	Darlington
W. J. Evans	Mech.	Abbeville

NAME	COURSE	COUNTY
B. B. Ezell	Agri.	Spartanburg
S. J. Ezell	Agri.	Spartanburg
J. L. Farmer	Mech.	Anderson
J. O. Field	Agri.	Pickens
R. H. Fike	Agri.	Spartanburg
L. E. Fitzsimmons	Civil	Charleston
D. P. Folke	Mech.	Bamberg
D. M. Fraser	Agri.	Barnwell
H. H. Fuller	Agri.	Laurens
M. J. Funchess	Agri.	Orangeburg
W. A. Gantt	Agri.	Aiken
F. N. Garrison	Agri.	Pickens
P. McD. Gee	Mech.	Union
W. P. Gee	Agri.	Union
M. M. Glasser	Mech.	Charleston
J. D. Graham	Mech.	Sumter
H. L. Grainger	Agri.	Horry
T. Hamilton, Jr.	Agri.	Hampton
J. H. Harvey	Agri.	Berkeley
A. R. Happoldt	Mech.	Charleston
D. N. Harris	Mech.	Richland
W. N. Henderson	Mech.	Greenwood
T. C. Heyward	Mech.	Beaufort
M. R. Hirsch	Mech.	Charleston
J. Hough, Jr.	Agri.	Kershaw
H. H. Huggins	Agri.	Clarendon
B. G. Hunter	Mech.	Anderson
E. L. Hutchins	Mech.	Pickens
C. C. Johnson	Agri.	Spartanburg
E. M. Jones	Mech.	Sumter
G. F. Kaigler	Mech.	Lexington
A. G. Kennedy	Mech.	Union
T. P. Kennedy	Agri.	Union
M. R. Kimbrell	Mech.	York
W. W. Kirven	Agri.	Darlington
W. W. Kirk	Mech.	Abbeville
E. S. Kohn	Mech.	Newberry
J. C. LaBorde	Agri.	Richland
J. J. LaRoche	Mech.	Charleston
J. T. Latimer	Agri.	Abbeville

NAME	COURSE	COUNTY
A. C. Lee	Mech.	Anderson
J. P. Lewis, Jr.	Mech.	Oconee
J. W. Lewis	Agri.	Horry
J. C. Littlejohn	Mech.	Union
F. A. Lown	Agri.	Lexington
R. B. Lowry	Agri.	Chester
J. E. Lunn	Agri.	Florence
W. M. Lunn	Agri.	Florence
N. Lykes	Agri.	Richland
W. A. Mace	Agri.	Marion
J. M. Massey	Mech.	York
C. W. Marston	Mech.	Henrico, Va.
F. L. Martin	Agri.	Horry
L. E. May	Agri.	Charleston
W. H. Maynard	Agri.	Greenwood
A. L. Moore	Agri.	Laurens
C. L. Moore	Mech.	York
P. A. Murray, Jr.	Met.	Charleston
C. McCaslan	Mech.	Greenwood
J. T. McLane	Agri.	Abbeville
C. E. McLean	Agri.	Chesterfield
C. A. McLendon	Agri.	Lee
J. McG. Napier	Agri.	Marlboro
O. W. Newman	Agri.	Chesterfield
T. L. Ogier, Jr.	Agri.	Charleston
O. M. Page	Mech.	Marion
J. R. Pennell	Civil	Anderson
J. A. Phillips	Agri.	Orangeburg
R. O. Poag	Mech.	York
W. O. Pratt	Mech.	Greenwood
J. E. Reaves	Mech.	Marion
E. B. Reeves	Mech.	Charleston
R. A. Reid	Mech.	Aiken
C. W. Rice	Agri.	Bamberg
L. G. Richardson	Agri.	Barnwell
H. B. Riser	Mech.	Laurens
H. L. Rivers	Mech.	Greenwood
W. J. Roach	Agri.	York
T. G. Robertson	Mech.	Laurens
O. Roper	Agri.	Marlboro

NAME	COURSE	COUNTY
W. McL. Rosborough	Mech.	Chester
T. L. Ross	Agri.	Darlington
W. H. Rumff	Agri.	Orangeburg
J. B. Ryan	Agri.	Sumter
M. L. Sandifer	Agri.	Bamberg
W. H. Scott	Agri.	Edgefield
R. G. Sessions	Agri.	Horry
S. H. Sherard	Agri.	Greenwood
B. F. Shockley	Mech.	Spartanburg
E. H. Shuler	Mech.	Aiken
J. H. Silcox	Met.	Charleston
J. B. Simpson	Mech.	Anderson
W. D. Simpson, Jr.	Mech.	Anderson
H. P. Sitton, Jr.	Agri.	Anderson
F. W. Smith	Mech.	Marion
G. W. Speer, Jr.	Agri.	Abbeville
J. Spratt	Mech.	Chester
W. B. Stanley	Mech.	Richland
C. LeR. Stevens	Agri.	Berkeley
H. K. Strickland	Agri.	Colleton
H. K. Sullivan	Mech.	Anderson
A. C. Summers	Agri.	Orangeburg
W. K. Tavel, Jr.	Mech.	Charleston
J. S. Taylor	Agri.	Oconee
W. A. Thomas	Agri.	Marlboro
E. J. Thornhill	Agri.	Dorchester
D. L. Tindal	Agri.	Clarendon
C. M. Trott, Jr.	Mech.	Charleston
G. M. Truluck	Agri.	Sumter
H. M. Turner	Mech.	Laurens
H. E. Vincent	Mech.	Hampton
J. L. Walker	Agri.	Clarendon
W. P. Wannamaker	Agri.	Orangeburg
G. S. Ward	Mech.	Georgetown
G. Warren	Agri.	Colleton
L. O. Watson	Agri.	Greenwood
G. G. Weathersbee	Agri.	Aiken
W. N. Wells	Agri.	Lee
J. S. Wessinger	Agri.	Lexington
E. R. Wheeler	Agri.	Darlington

NAME	COURSE	COUNTY
F. L. Whitlock	Mech.	Chester
H. C. Wilburn	Agri.	Union
J. A. Williams	Mech.	Pickens
M. G. Williams	Mech.	Pickens
C. L. Williamson, Jr.	Agri.	Sumter
F. B. Wise	Agri.	Florence
W. R. Woodward	Agri.	Barnwell
W. T. Yarborough	Agri.	Fairfield

Freshman Class

R. E. Adams	Agri.	Edgefield
S. L. Allan	Mech.	Dorchester
T. Ancrum ✓	Agri.	Kershaw
M. C. Antley	Mech.	Orangeburg
S. W. Arrington ✓	Mech.	Greenwood
J. L. Aull	Mech.	Newberry
C. E. Baldwin	Agri.	Greenville
B. F. Ballew, Jr.	Agri.	Laurens
B. E. Barksdale	Agri.	Laurens
G. M. Barnett	Agri.	Oconee
W. M. Bell	Agri.	Lee
J. E. C. Bischoff	Agri.	Charleston
J. R. Blair	Mech.	York
R. E. Blake	Agri.	Abbeville
J. C. Blalock	Mech.	Cherokee
B. L. Bomar	Mech.	Spartanburg
W. C. Boyleston	Mech.	Aiken
L. B. Brandon	Agri.	York
T. L. Brice	Mech.	Fairfield
W. J. Brockinton	Agri.	Williamsburg
L. O. Bruce	Agri.	Oconee
D. L. Bryson	Agri.	Fairfield
N. A. Bull	Mech.	Orangeburg
W. M. Burnett	Mech.	Aiken
G. A. Burton	Mech.	Newberry
L. H. Butler ✓	Mech.	Georgetown
L. P. Byars	Agri.	Marion
A. M. Campbell ✓	Mech.	Charleston
J. Carothers	Mech.	York
E. J. Carpenter	Mech.	Cherokee

NAME	COURSE	COUNTY
E. Chamness	Mech.	Marlboro
J. E. Clark	Agri.	Clarendon
O. M. Clark	Mech.	Lexington
W. C. Clark	Agri.	Lee
E. D. Clement	Agri.	Charleston
C. P. Cleveland	Mech.	Spartanburg
I. N. Colclough	Mech.	Clarendon
L. A. Coleman	Mech.	Florence
R. Coleman	Mech.	Fairfield
S. Coles	Mech.	Richland
J. C. Covington	Mech.	Marlboro
A. B. Craig	Mech.	Fairfield
J. W. Crawford	Mech.	Anderson
W. G. Dominick	Mech.	Newberry
C. G. Dorman	Mech.	Spartanburg
J. F. Dorroh	Mech.	Laurens
J. L. Dove	Agri.	Fairfield
J. W. DuPree	Agri.	Laurens
R. Earle	Agri.	Greenville
J. L. Eason	Agri.	Charleston
P. T. Easterling	Mech.	Marlboro
J. W. Elgin	Mech.	Anderson
T. W. Epps	Agri.	Williamsburg
G. F. Ezell	Agri.	Spartanburg
C. W. Fant	Mech.	Anderson
N. A. Felton	Mech.	Anderson
F. Flemming	Agri.	Greenville
A. K. Folger	Mech.	Cherokee
J. T. Folk	Mech.	Newberry
T. Fulmer	Mech.	Saluda
G. C. Furtick	Mech.	Lexington
F. L. Gandy	Mech.	Darlington
S. B. Gandy	Agri.	Darlington
R. H. Gaines	Agri.	Anderson
T. W. Gaines	Agri.	Greenwood
S. T. Gallman	Agri.	Newberry
J. J. Gantt	Mech.	Charleston
E. A. Gardner	Mech.	Aiken
L. Gardner	Mech.	Darlington
E. E. Gary	Agri.	Greenville

NAME	COURSE	COUNTY
R. T. Gaston	Mech.	Cherokee
C. H. Goldsmith	Agri.	Greenville
W. C. Goodwin	Agri.	Greenville
W. D. Goodwin, Jr.	Mech.	Anderson
A. S. Goss	Mech.	Union
C. Y. Gossett	Mech.	Anderson
O. Graham	Agri.	Williamsburg
E. B. Green	Agri.	Pickens
F. B. Green	Mech.	York
H. H. Green	Mech.	Abbeville
A. Grier	Mech.	Sumter
T. P. Grimball	Agri.	Charleston
P. A. Gwaltney	Agri.	Fairfield
G. A. Hanna	Agri.	Hampton
A. L. Harris	Agri.	Spartanburg
L. G. Harris	Mech.	Union
R. A. Harris	Mech.	Laurens
J. C. Harrison	Mech.	Colleton
E. L. Hart	Mech.	Spartanburg
E. C. Haskell	Mech.	Abbeville
J. L. Hawley	Mech.	Fairfield
J. S. Holland	Mech.	Greenwood
E. R. Horton, Jr.	Mech.	Anderson
A. C. Hunter	Agri.	Newberry
T. M. Hunter	Mech.	Newberry
W. M. Haynsworth	Mech.	Florence
W. G. Hyrne	Mech.	Colleton
H. C. Huffman	Agri.	Beaufort
W. H. Inglesby	Mech.	Dorchester
J. D. Irby	Agri.	Spartanburg
W. P. Irwin	Mech.	Spartanburg
J. Iseman	Mech.	Clarendon
T. M. Jervey	Mech.	Charleston
R. P. Jeter	Mech.	Union
W. F. R. Johnson	Mech.	Marion
W. T. Jones	Mech.	Abbeville
S. Jordan	Mech.	Chester
A. L. Keasler	Mech.	Anderson
G. W. Keitt	Agri.	Pickens
S. O. Kelly	Mech.	Lee

NAME	COURSE	COUNTY
A. W. Kreamer	Mech.	Greenville
G. E. Lachicotte	Agri.	Georgetown
T. G. Ladshaw	Mech.	Spartanburg
J. D. Lemmon	Agri.	Lee
J. H. Lesesne	Mech.	Charleston
J. P. Leslie	Agri.	York
B. R. Lewis	Mech.	Barnwell
O. D. Lewis	Mech.	Marion
T. R. Littlejohn	Mech.	Union
J. N. Loadholt	Mech.	Barnwell
R. K. McClain	Mech.	Spartanburg
E. C. McCown	Agri.	Anderson
W. R. McCown	Agri.	Anderson
G. C. McCelvey	Agri.	Abbeville
L. deB. McCrady	Mech.	Charleston
W. S. McCrady	Mech.	Charleston
H. W. McIver	Mech.	Chesterfield
J. N. McLaurin	Mech.	Kershaw
K. McLaurin	Agri.	Sumter
J. P. McMillan	Mech.	Marion
A. M. McWhirter	Mech.	Union
E. C. Martin	Agri.	Anderson
G. W. Matthews	Mech.	Saluda
W. E. Matthews	Mech.	Barnwell
P. Miley	Agri.	Hampton
J. C. Milling	Mech.	Greenwood
P. G. Mims	Mech.	Darlington
P. McQ. Montgomery	Agri.	Williamsburg
H. P. Moore	Agri.	Sumter
O. S. Munnerlyn	Mech.	Lee
J. D. Murray	Mech.	Colleton
W. L. Nance	Mech.	Laurens
R. E. Nickles	Mech.	Abbeville
C. P. Norris	Mech.	Anderson
W. F. Odom	Agri.	Barnwell
E. Page	Agri.	Marion
W. P. Pagett	Agri.	Richland
E. Parker	Mech.	Sumter
B. L. Parnell	Mech.	Darlington
S. O. Pegues	Mech.	Marlboro

NAME	COURSE	COUNTY
C. H. Pennell	Mech.	Abbeville
W. C. Pitts	Mech.	Laurens
E. P. Porcher	Mech.	Charleston
J. C. Pridmore	Agri.	Cherokee
McQ. Quattlebaum	Mech.	Horry
S. T. Ramey	Agri.	Abbeville
T. B. Reeves	Agri.	Laurens
J. C. Reid	Mech.	Spartanburg
R. Reid	Mech.	York
C. M. Robbs	Mech.	Cherokee
C. P. Roberts	Mech.	Greenwood
J. C. Robinson	Agri.	Pickens
W. A. Robinson	Mech.	Pickens
F. E. Rogers	Mech.	Darlington
G. D. Ryan	Mech.	Sumter
C. A. Sanders	Agri.	Beaufort
H. K. Sanders	Agri.	Chester
F. W. Schroder	Mech.	Aiken
W. J. Sheely	Agri.	Newberry
L. H. Siau	Agri.	Georgetown
E. T. Simmons	Mech.	Berkeley
H. M. Slade	Mech.	Charleston
J. T. Sloan	Mech.	Richland
A. L. Smith	Agri.	Marion
H. L. Smith	Mech.	Georgetown
W. C. Spratt	Mech.	Chester
H. E. Sturdyvin	Mech.	Greenville
J. M. Sturdyvin	Mech.	Greenville
S. B. Sullivan	Mech.	Greenville
S. Swygert	Agri.	Laurens
F. G. Tarbox	Agri.	Georgetown
J. A. Teague	Mech.	Laurens
H. F. Thode	Agri.	Oconee
J. Y. Todd	Agri.	Abbeville
M. D. Toney	Mech.	Edgefield
M. L. Tyler	Agri.	Aiken
H. C. Twiggs	Mech.	Greenwood
J. H. Vallentine	Agri.	Orangeburg
B. Walsh, Jr.	Mech.	Sumter
V. L. Warner	Mech.	Greenwood

NAME	COURSE	COUNTY
D. W. Watkins	Agri.	Anderson
T. G. Watkins	Mech.	Anderson
L. H. Weir	Agri.	Fairfield
E. W. Webb	Mech.	Greenwood
E. Weeks	Agri.	Aiken
L. J. Welch	Mech.	Union
A. C. Whittle	Agri.	Saluda
C. Y. Wigfall	Agri.	Charleston
H. L. Wightman	Mech.	Greenwood
P. H. Wilkes	Mech.	Chester
J. P. Williams	Mech.	York
J. R. Williams	Mech.	Charleston
C. L. Wilson	Agri.	Laurens
J. H. Wilson	Mech.	Chester
J. E. Wofford, Jr.	Agri.	Anderson
B. E. Wolff	Agri.	Laurens
E. H. Wood	Mech.	Cherokee
J. D. Wood	Agri.	Cherokee
C. M. Wootan	Mech.	Chester
J. Wylie	Mech.	Chester
J. McF. Wylie	Mech.	York
E. H. Wyman	Mech.	Aiken
T. H. Yeargin	Mech.	Laurens
A. C. Young	Agri.	Richland

Preparatory Class

G. E. Able.....	Orangeburg
W. Allen	Spartanburg
J. E. Andell	Charleston
G. D. Anderson.....	Georgetown
H. R. Bailey.....	Barnwell
W. D. Barnett.....	Oconee
J. J. Beshere.....	Charleston
L. H. Boatwright.....	Saluda
H. Q. Boggs.....	Pickens
W. C. Bolt.....	Laurens
R. E. Bowen.....	Pickens
B. K. Boyleston.....	Aiken
J. A. Breazeale.....	Anderson
S. K. Brockinton.....	Williamsburg

NAME	COUNTY
M. P. Brodie.....	Aiken
O. G. Burriss	Anderson
W. F. Clark.....	Saluda
L. W. Corbett.....	Lee
D. H. Covington	Marlboro
D. L. Dominick.....	Newberry
P. F. Doyle.....	Georgetown
J. L. DuBose.....	Darlington
L. H. DuBose.....	Lee
E. E. Epting.....	Anderson
G. T. Floyd.....	Williamsburg
L. C. Floyd.....	Williamsburg
J. R. Gantt.....	Aiken
W. C. Gibson.....	Greenville
F. C. Gilbert.....	Newberry
A. E. Gilmore.....	Union
J. J. Glenn.....	Anderson
J. D. Good.....	York
W. S. Goodman.....	Oconee
J. T. Green.....	Sumter
T. C. Haile.....	Sumter
A. M. Hall.....	Lancaster
W. W. Hames.....	Union
B. B. Harris	Anderson
N. O. Head.....	Aiken
R. P. Henderson.....	Greenwood
J. W. Hogg.....	Barnwell
T. G. Hope.....	York
A. L. Howell.....	Colleton
J. E. Hydrick.....	Orangeburg
O. A. Hydrick.....	Orangeburg
J. A. Ingram.....	Florence
F. M. Johnson.....	Colleton
R. G. Jones.....	Sumter
J. E. Kennedy.....	Chester
C. P. Kibler.....	Newberry
D. I. Kimball.....	York
W. O. Kimball.....	York
A. S. Lachicotte.....	Georgetown
G. P. Ladd.....	Fairfield

NAME	COUNTY
R. Lebbby	Charleston
J. Leckie	Chester
E. F. McDaniel	Anderson
A. H. McDermid	Richland
E. McElveen	Florence
R. H. McFadden	York
C. A. McMahan	Pickens
I. McPhail	Anderson
D. A. Macauley	Chester
J. L. Mahaffey	Laurens
T. L. Marion	Chester
G. L. Marshall	Greenwood
B. W. Martin	Greenville
A. R. Mitchell	Charleston
C. F. Middleton	Charleston
P. B. Morange	Abbeville
J. D. O'Bryan	Williamsburg
F. F. Parker	Spartanburg
C. A. Parks	Edgefield
H. B. Pitts	Sumter
R. D. Powe	Chesterfield
J. S. Pyatt, Jr.	Georgetown
B. T. Rice	Barnwell
M. McK. Roddey	York
J. L. Rosborough	Fairfield
C. B. Sanders	Sumter
O. T. Sanders	Sumter
W. J. Sanders	Sumter
J. A. Self	Edgefield
J. J. D. Shuler	Lexington
G. T. Speake	Newberry
F. E. Spears	Union
St. J. L. Springs	Georgetown
E. L. Stevenson	Fairfield
H. N. Stokes	Darlington
W. J. Tate	Anderson
M. L. Thomas	Colleton
F. S. Thomason	Spartanburg
P. G. Thompson	Anderson
J. H. Truluck	Sumter

NAME	COUNTY
Henry E. Vincent.....	Hampton
J. W. Waldrop.....	Newberry
T. G. Wall.....	Greenville
A. B. Weathersbee.....	Barnwell
F. W. Welborn.....	Laurens
J. L. Welborn.....	Anderson
J. St. C. White.....	Berkeley
W. E. Whitlock	Williamsburg
H. R. Williams.....	Beaufort
L. T. Wyndham.....	Berkeley

Special Students

E. R. McIver (B. S. Clemson College), Agri...	Darlington
W. H. Newell (B. S. Clemson College) Civil Eng.	Anderson
S. R. Rhodes (Furman University), Mech. Elec. Eng... ..	Florence

Two-Year Course Textile Students

C. H. Boyd, 2d year.....	Rutherford, N. C.
W. L. Boyd, 2d year.....	Mecklenberg, N. C.
L. O. Bunton, 1st year.....	Anderson
W. H. Sherard, 1st year.....	Greenwood

Irregular Students

A. N. Funderburk, Agri.....	Lancaster
S. J. Funderburk, Agri.....	Lancaster
J. B. Henry, Text.....	Greenville
H. G. Lewis, Agri.....	Oconee
J. A. McKeown, Civil Eng.....	Chester
C. K. Pollitzer, Agri.....	Beaufort
S. F. Reid, Agri.....	Abbeville
J. Smeltzer, Mech. Elec.....	Greenville
A. N. Whitesides, Text.....	Chester

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Virginia. . .	1

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Anderson ..	47
Bamberg ..	3
Barnwell ..	16
Beaufort ..	9
Berkeley ..	6
Charleston. . .	47
Cherokee. . .	10
Chester. . .	21
Chesterfield. . .	4
Clarendon. . .	7
Colleton. . .	15
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